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Sustainable Development Goals: Challenges and Opportunities for the GCC Countries

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Introduction

In September 2015, world leaders chose the sustainable development path for the next fifteen years after agreeing on seventeen Sustainable Development Goals (SDGs) with 169 targets. The SDGs were clubbed under the title "Transforming Our World: the 2030 Agenda for Sustainable Development."[1] They will build upon and replace the Millennium Development Goals (MDGs), the eight international development goals established in 2000 in the Millennium Summit of the United Nations (UN). About 189 member states of the UN committed to cooperate in achieving these eight goals by the year 2015.

This paper discusses the major differences between SDGs and MDGs and assesses, briefly, each of the seventeen SDGs in relation to the Gulf Cooperation Council (GCC) countries (Bahrain, Kuwait, Saudi Arabia, Oman, Qatar and the United Arab Emirates) in terms of current status and future prospects.

1. Development Knowledge Platform, United Nations, *Transforming Our World: The 2030 Agenda for Sustainable Development* (United Nations, 2015) available at https://sustainabledevelopment.un.org/post2015/transformingourworld/publication.

Figure 1: Sustainable Development Goals 2015

Source: Development Knowledge Platform, 2015.

The SDGs and MDGs

According to the final Millennium Development Goals (MDGs) report 2015, some of the goals have been achieved. For instance, with regard to the first goal of eradicating extreme poverty and hunger, the rate of extreme poverty in developing countries decreased from 47 percent in 1990 to 14 percent in 2015. Regarding the second goal of achieving universal primary education, the primary school enrollment rate in developing countries increased from 83 percent in 2000 to 91 percent in 2015.[2]

The MDGs report shows substantial achievement of some of the goals; however, there are other issues where progress has not been achieved and solutions are needed at different levels. According to the UN, for instance, there is still discrimination against working women, women's participation in decision-making remains weak, and poverty and hunger still exist in many parts of the world. Another important global issue that needs to be solved is climate change and environmental degradation. Besides, it is hard to achieve sustainable development in some parts of the world due to conflicts and an increasing number of refugees.

The proposed SDGs offer major improvements on the MDGs. These can be summarized as follows:

2. United Nations, *The Millennium Development Goals Report 2015* (United Nations, 2015), available at http://www.un.org/millenniumgoals/2015_MDG_Report/pdf/MDG%202015%20rev%20(July%201).pdf.

- The SDGs' framework addresses key systemic barriers to sustainable development such as inequality, unsustainable consumption patterns, weak institutional capacity, and environmental degradation that the MDGs neglected.
- The MDGs captured, to a limited degree, three dimensions of sustainability: economic, social and environmental. In contrast, the SDGs are clearly comprehensive and deal with all dimensions of sustainability.
- The MDGs dealt only with developing countries. In contrast, the SDGs deal with all countries – developed and developing.
- Linked to the previous point, unlike the MDGs, multilateral agreements (MEAs) will be very crucial for the success of the SDGs as both address global issues.

Roughly about half of the Agenda's 17 SDGs focuses on the environment or the sustainability of natural resources, according to the second session of the United Nations Environment Assembly (UNEA-2), which took place at UNEP headquarters in Nairobi, Kenya.[3] This is a clear indication that, finally, after nearly half a century, the environment is at the center of the world development agenda with an even more important role allocated to environmental issues than items such as poverty, trade, and security.

Apart from the positives, one potential inconsistency in the SDGs is that many of their targets contribute to several goals, and some goals and targets may conflict with one another. Thus, action to meet one target could have unintended consequences on others, if they are pursued separately. For example, progress on ending poverty (SDG 1) cannot be achieved without progress on the food security target (SDG 2) or without progress on ensuring access to affordable, reliable, sustainable and modern energy for all (SDG 7). Macroeconomic policies related to targets on full and productive employment and decent work (SDG 8) will not be successful unless progress is also made in the reduction of inequality (SDG 10) and without enhancing resilience to climate change (SDG 13). Success in these will lead to better health and well-being, thus contributing to the achievement of SDG 3 as well as success in many other goals such as SDGs 1, 11, and 16.

3. UNEP, UNEA *Delivering on the 2030 Agenda* (Kenya, UNEP, 2016), available from http://www.unep.org/docs/UNEA_2_Brochure.pdf.

MDGs and the GCC

All the GCC states are committed to achieving the MDGs. As such, by looking at how successful these states have been in meeting their goals, we can get a more accurate idea of their actual performance on the development path.

Table 1: GCC countries' performance on the MDG targets (Based on national MDG progress reports)

	1	2	3	4	5	6	7	8
State \ MDG	**Eradicate extreme hunger and poverty**	**Achieve universal primary education**	**Promote gender equality and empower women**	**Reduce child mortality**	**Improve maternal health**	**Combat HIV/AIDS, malaria and other diseases**	**Ensure environ-mental sustainability**	**Develop a global partnership for development**
Bahrain	Achieved	Achieved	Ongoing	Ongoing	Ongoing	Ongoing	Progress with Difficulties	Ongoing
Kuwait	Achieved	Ongoing	Ongoing	Achieved	Ongoing	Ongoing	Progress with Difficulties	Achieved
Oman	Achieved	Ongoing	Ongoing	Ongoing	Ongoing	Ongoing	Ongoing	Ongoing
Qatar	N/A	Ongoing	Progress with Difficulties	Achieved	Achieved	Achieved	Ongoing	Achieved
Saudi Arabia	Ongoing	Ongoing	Progress with Difficulties	Achieved	Achieved	Ongoing	Ongoing	Ongoing
UAE	N/A	Achieved	Ongoing	Ongoing	Achieved	Achieved	Ongoing	Ongoing

Source: Compiled by the authors.

Going by Table 1, the overall image is not reassuring: progress is mixed as of the eight MDGs, some goals have been achieved but the majority seems to be ongoing.

SDGs and the GCC

In order to accomplish the SDGs, the GCC countries will have to reconcile their many priorities ranging from economic diversification, water scarcity, food security, environmental protection, and conservation to newly hazardous impacts of global warming, e-waste, and employment.

In the GCC, the economy and natural resources are inextricably linked. All business sectors depend upon natural resources for their success – be it the petroleum, tourism, or even the services sectors. The GCC's relatively scarce natural resource

base is a significant source of the region's wealth and prosperity. The challenge is how these countries can use those resources productively while maintaining high environmental standards that preserve and enhance the quality of the environment for current and future generations.

The post-2015 development agenda includes a universal agenda as well as a local agenda for each country. Within the agreed goals and targets at the global level, the GCC countries will need to identify targets to achieve sustainable development at the local and regional levels with the knowledge that those targets contribute at the same time to sustainable development on the global level.

One specific focus of the GCC is on economic development as the countries are aware that through such development, they will be in a better position to eradicate poverty, create jobs, and increase prosperity. However, economic development in itself is insufficient. Instead, the emphasis must be on sustainable economic development that is inclusive in also addressing the needs of the poor, the vulnerable, women and men, and indigenous people (Bedouins, for instance).

Energy is certainly an enabler of social and economic development in that it drives growth and contributes to livelihoods. The case for sustainable energy is of crucial importance for the GCC countries, but it is also a challenge. While these countries need to achieve a sustainable energy order that maintains their high income, they need, at the same time, to shift their dependence from fossil fuels to renewable and clean energy and reduce GHG emissions. The drastic decline in oil prices since the end of 2014 has made this transition even more urgent. It is, however, a tricky balance to achieve.

The SDGs are not binding under international law. Countries may set individual priorities. This is good, on the one hand, as the GCC can decide which SDG is more important and which is less of a priority according to their plans. On the other hand, the goals that receive less attention might end up affecting overall progress in the achievement of all SDGs given the interlinkages that exists between these goals.

In October 2015, during the 70th General Assembly of the United Nations in New York, Kuwait's First Deputy Prime Minister and Foreign Minister Shaikh Sabah Al-Khalid indicated "Kuwait's keenness to adopt the 17 goals and be part of its development plan, whether annual or long-term, pointing out that the targets include topics such as poverty, health, education, the environment and women's empowerment, gender equality and other issues of global importance."[4]

4. United Nations, "United Nations Still Essential but Needs Reform to Be 'Fit for Purpose' in Coming Decades, Speakers Say as General Assembly Debate Continues," September 29, 2015, http://www.un.org/press/en/2015/ga11694.doc.htm.

At the same meeting, Saudi Arabia's Foreign Minister Adel al-Jubeir said: "We are meeting today after adopting a statement on 'Transforming our World: Sustainable Development of the 2030 plan Sustainable Development Goals beyond 2015,' and in continuation of the experience that we practiced together in the quest to achieve the Millennium Development Goals from 2000 until the end of this year's goals, in a positive alliance between governments and civil society institutions, and international and relevant authorities, to combat poverty, disease and hunger, in a collective action and international cooperation effectively."[5]

Despite such statements of support, the GCC states face many challenges in realizing SDGs. The challenges include, for instance, economies that continue to be heavily dependent on oil, high energy and water usage (or wasteful consumption patterns), car oriented mobility, rapid population growth, rapid urbanization, education and employment challenges, lack of natural resources, desert and climatic conditions, and lack of local industries, technologies and innovation. A closer look at the individual SDGs will highlight those challenges further.

SDG No. 1: End Poverty in All Its Forms Everywhere

In general, poverty is not a prominent issue in the GCC and may be addressed through diverse economic initiatives in addition to sustainable development. For several decades now, the six member states of the GCC have been financing their socioeconomic development with hydrocarbon exports. While their high reliance on oil and natural gas revenues has exposed these countries to economic vulnerabilities, the revenues have also enabled the GCC states to build modern infrastructure, sustain high standards of living for their nationals, and exert regional and global influence through sovereign wealth funds and investments.

The key question is how to sustain such high standard of living levels for their nationals and residents in the future. Overall, this poses a real concern for governments and citizens especially in light of the recent rapid decline in the price of oil that has caused a loss of income for the GCC states amounting to $380 billion in 2015 alone.

Maintaining the welfare of citizens is also an issue in light of the continued significant dependence on a foreign workforce. Table 2 shows the number of citizens and non-citizens in the GCC countries.

5. Ibid.

Table 2: The number of nationals and non-nationals in the GCC countries and total population estimates

Country	Total Population 2015	Nationals	Non-Nationals	Total Population Estimate 2030
Saudi Arabia	31.6 million	70%	30%	39.0 million
Oman	4.2 million	56%	44%	5.2 million
Qatar	2.4 million	12%	88%	2.8 million
Bahrain	1.4 million	48%	52%	1.7 million
Kuwait	3.8 million	30%	70%	5 million
United Arab Emirates	9.6 million	12%	88%	12.3 million
Total	53 million			66 million

Source: World Bank, 2015 World Population Data Sheet.

For the national populations, one of the key challenges being faced by the GCC countries is providing affordable housing. The Gulf region's population is growing rapidly, and the need for housing is becoming ever more pressing. According to Mona Abu Sulyman, a prominent Arab affairs commentator, "Saudi Arabia is a rich country but we do not have rich citizens. Even the middle classes can typically own a home after they are fifty."[6]

Furthermore, there is a big gap between the increased demand for affordable housing and the government's housing delivery. In addition, there is no balance between national salaries and housing costs.[7] For instance, an average home in Saudi Arabia costs about SR700,000 which is approximately 10 times the average national salary. In order to overcome the current shortages, governments will have to change their housing delivery models and shift to a public-private partnership approach on both the supply and demand sides.[8]

6. EY, "Housing the Growing Population : Jeddah Economic Forum 2013 Post Forum Report," 2013, http://www.ey.com/Publication/vwLUAssets/EY_-_Housing_the_growing_population/$FILE/EY-Housing-the-growing-population.pdf, 5.
7. Ibid.
8. For a good overview of the housing issue in the Gulf, see David Smith and Angus Freeman, eds., *Housing Markets and Policy Design in the Gulf Region* (Gulf Research Centre Cambridge, 2014), available at http://grc.net/index.php?frm_module=contents&frm_action=detail_book&frm_type_id=&pub_type=4&publ_id=&sec=Contents&publang=&frm_title=GRC%20Books&book_id=84653&p_id=&frm_pageno=9&op_lang=en.

Table 3: Waiting period/lists for government housing services

Saudi Arabia	Around 15 years for land and 10 + years for a government loan
Kuwait	Up to 8 years for a loan and 20 years for a house
Bahrain	50,000 on Ministry of Housing's waiting list
Dubai	7,000 on Mohammed Bin Rashid Housing Establishment's waiting list

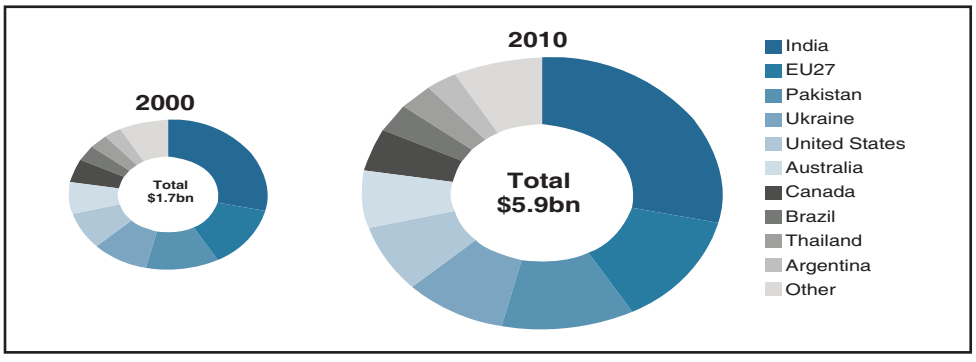
Source: Government Housing Authorities, 2014.

SDG No. 2: End Hunger, Achieve Food Security and Improved Nutrition, and Promote Sustainable Agriculture

Hunger is the number one global risk that causes death — higher than malaria, AIDS, and tuberculosis. With the world's population set to reach 9.5 billion by 2050, food security has to be seen as a global issue and not just a problem in the developing countries.

Hunger is not a prominent issue for the GCC. Investment in agriculture and fisheries has helped improve food security and nutrition in the region. The GCC countries depend mostly on international food trade and consume about 80-90 percent of the imported food. Given that the GCC's food supply is mostly linked with energy exports, the member countries rely on trade to satisfy their food demand. This, in turn, means these countries face two main risks: a price risk and a supply risk. In the last few years, the GCC countries have promoted numerous bilateral trade relationships with countries around the world, also from the perspective of promoting food security arrangements. Figure 2 shows the increase in trade dependencies in cereals between 2000 and 2010.[9]

Figure 2: GCC trade dependencies in cereals (2000 and 2010)



Source: Bailey and Willoughby, "Edible Oil: Food Security in the Gulf," 2013.

9. Rob Bailey and Robin Willoughby, "Edible Oil: Food Security in The Gulf," Energy, *Environment and Resources* (November 2013), available at: https://www.chathamhouse.org/sites/files/chathamhouse/public/Research/Energy,%20Environment%20and%20Development/bp1113edibleoil.pdf.

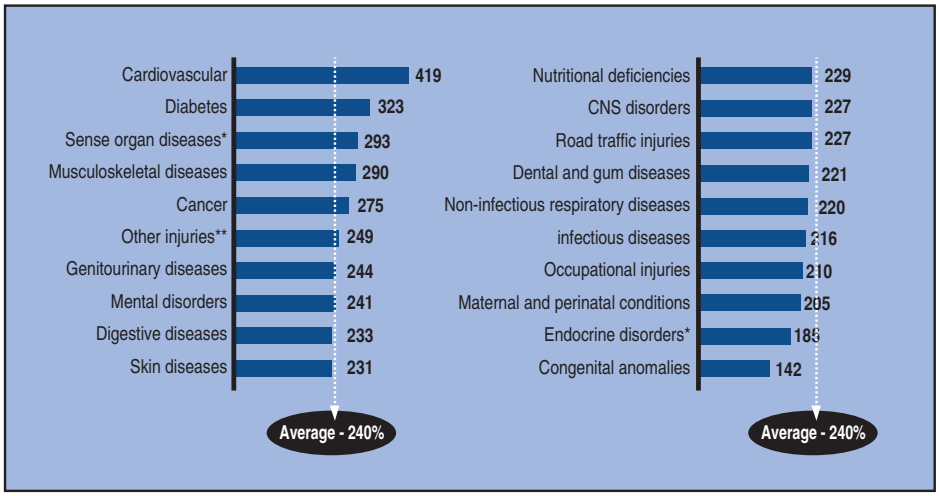
In order to overcome the problem of food security, the difficulties of expansion of domestic agriculture due to climatic reasons, and the lack of water and arable land resources, the GCC countries have been actively investing in long-term agriculture projects in other parts of the world, especially in Africa and Asia. Despite the widespread criticism of such a move, it should be seen as a win-win policy as it secures the agricultural needs of the GCC countries and, at the same time, helps with development and employment projects in the African and Asian countries. Yet, many projects have not been implemented due to issues such as political resistance, lack of infrastructure, and financing problems. In fact, policies relating to land acquisition in other countries must be structured keeping these factors in mind. Other alternatives aim to raise self-sufficiency, such as Qatar's National Food Security Program (QNFSP) or Qatar's proposal for a Global Dry Land Alliance at the UN in order to increase agricultural production, and encourage knowledge transfers and investments in food security schemes in arid countries.[10]

SDG No. 3: Ensure Healthy Lives and Promote Well-Being for All at All Ages

The demand for healthcare has been steadily increasing in the Gulf region due to population growth, aging, and numerous health risk factors. Not only will the population reach 66 million by 2030 (see Table 2), the percentage of elderly as part of the population will increase as well. In Saudi Arabia, for example, the number of people over 65 is estimated to increase seven-fold in the next 25 years. Related to this, the demand for treatment will increase by 240 percent in the next 20 years. In particular, this pertains to cardiovascular disease (419 percent increase) and diabetes-related ailments (323 percent increase).[11]

10. See Eckart Woertz, "The Gulf and Asia: Cooperation or Competition for Food Security?" in *The Politics of Food Security: Asian and Middle Eastern Strategies*, ed. Sara Bazoobandi (Berlin: Gerlach Press, 2014), 18-20.
11. Mona Mourshed, Viktor Hediger, and Toby Lambert, "Gulf Cooperation Council Healthcare: Challenges and Opportunities," (2006), available at: http://middleeasthospital.com/GCC%20HEALTHCARE%20CHALLENGE.pdf.

Figure 3: Projected increase in treatment demand in the GCC countries by 2050 (percentage)



Source: McKinsey & Company.

* Primarily eye

** Primarily household; not occupational or road traffic

Healthcare provision in the GCC countries depends mostly on government funding and support. The governments have allocated significant portions of their national budget to healthcare. In Saudi Arabia, healthcare spending trebled between 1995 and 2010, and 11 percent of the 2014 budget amounting to nearly $20 billion was allocated to healthcare.[12] Next to Saudi Arabia, the UAE accounts for 26 percent of the total healthcare spending by the GCC governments. Qatar, meanwhile, has one of the highest per capita healthcare spend in the GCC estimated at $2,043. As in other GCC states, the Qatari government has also allocated significant resources to improve the healthcare sector, including $4.3 billion in projects such as the Sidra Medical and Research Center, the Hamad General Hospital, and 19 new health centers.[13] According to Alpen Capital, the GCC healthcare market is projected to grow at over 12 percent annually until 2020, with the value increasing from $40.3 billion in 2015 to $71.3 billion in 2020.[14]

12. *Kingdom of Saudi Arabia: Healthcare Sector Report,* Gulf Research Center, May 2014, 9, available at: http://grc.net/index.php?frm_module=contents&frm_action=detail_book&frm_type_id=&pub_type=9&publ_id=85&sec=Contents&frm_title=Reports&book_id=84457&op_lang=en&sec_type=h&publ_type=54.
13. Ardent Advisory & Accounting, *GCC Healthcare Sector: A Focus Area for Governments* (2015), available at: http://www.ardentadvisory.com/images/GCC%20Healthcare%20Sector% 20Report.pdf.
14. "GCC Healthcare Sector Forecast to Grow to $71bn Market by 2020," Arabian Business, February 26, 2016, available at: http://www.arabianbusiness.com/gcc-healthcare-sector-forecast-

The GCC has recognized the importance of protecting human health and the environment by developing environmental laws and initiating better regulations for safe disposal of hazardous materials. Several environmental laws that aim to protect human health from the effects of water, air, and soil pollution have been adopted by the GCC. In addition, many environmental laws with health impacts, such as the Common Law for Handling Radioactive Substances, the Common Law for Waste Management, the Common Law for the Management of Hazardous Chemicals, Coordination of Procedures among Member States for Trans-border Handling of Hazardous Waste for the Purpose of Processing, Recycling or Disposal, the Common Law for the Management of Healthcare Waste, and environmental criteria and standards for the quality of air and water have been adopted.

While significant progress has been achieved, the rising costs of healthcare and lack of availability of sufficient specialized hospital staff are two of the key challenges faced by the GCC governments as they try to meet the demands of SDG 3, especially in light of the growing pressure on national budgets. However, as the expansion of healthcare is a part of all the respective Vision documents released by the individual GCC states in recent years, this should be one of the easier targets to meet.

SDG No. 4: Ensure Inclusive and Equitable Quality Education and Promote Lifelong Learning Opportunities for All

The importance of providing good quality education, including education on sustainable development concepts, is linked to all seventeen SDGs. Education is connected to issues such as poverty, sustainable management, water, and employment. It is also a crucial tool in empowering societies and furthering economic and social change.

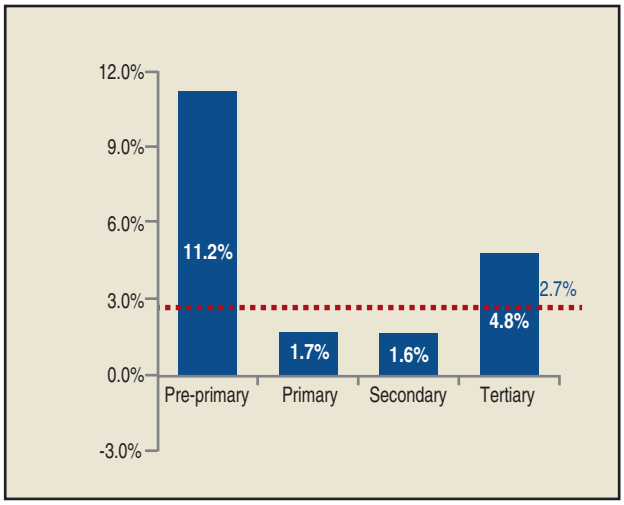
The GCC governments have been focusing on the education sector; government expenditure on education in the UAE, Saudi Arabia, and Oman has increased from 12.7 percent in 1985 to 19.3 percent in 2008. In 2014, education accounted for up to 25 percent of total spending in the respective annual budgets of the GCC states. In Saudi Arabia, of the total SAR217 billion allocated for education and training, SAR14 billion was given to finance 164 new educational projects, while another SAR12 billion was provided to build three new universities as well as refurbish existing universities. About SAR400 million was allocated for the refurbishment of public schools and sports centers, and SAR22 billion was set aside for the 207,000 plus Saudi students and their families who study abroad.[15]

grow--71bn-market-by-2020-621929.html#.V1_bG_l96Cg.

15. F. Alturki, "Saudi Arabia's 2015 Fiscal Budget," Jadwa Investment, 2014, available at: http://susris.com/wp-content/uploads/2015/01/2015-Budget.pdf.

Oman allocated about 12 percent of its total budget to the education sector during 2009-2014, while the government of Kuwait allocated about 13 percent of its total budget to education in 2014. While the Kingdom of Bahrain increased its allocation for the education sector to 8.2 percent between 2010-2014, there has been a decrease in 2015-2016 due to the decline in oil prices. Meanwhile, Qatar doubled its education spending between 2010 and 2015 and made significant strides in improving its education quality.[16] There are several factors behind this focus on education including the rising demand as a result of population growth, increasing incomes, and, most importantly, the desire for high quality education in the region.

Figure 4: The Compound Annual Growth Rate (CAGR) of no. of students by segment in the GCC (2011-2016)



Source: Strategic Decisions and Consulting Company, 2015.

However, there are a number of challenges facing the education sector in the GCC. One of the biggest issues is the paucity of skilled teachers. Another is the low participation rate in higher education as compared to developed countries, which reflects a failure in matching school skills and labor markets requirements especially in relatively new fields such as renewables, the environment, and information technology. Fresh graduates are also not able to find job opportunities in private companies in the GCC region due to the lack of a proper link between education output and private sector requirements, which is considered as an important factor in the rising unemployment rate in the GCC region.[17]

16. Ardent Advisory & Accounting, *GCC Education Sector: A Growing Opportunity*, 2015, available at: http://www.ardentadvisory.com/images/GCC%20Education%20Sector%20Report.pdf.
17. Monitor ICEF, "Key Growth Drivers behind Increasing Enrollment in Gulf States," August 30, 2012, http://monitor.icef.com/2012/08/key-growth-drivers-behind-increasing-enrolment-

The governments understand the importance of investing in skills, education, and training to develop a workforce in a sustainable manner. The skill gap issue in the GCC countries is a matter of growing concern. This, in turn, has led to the demand for more collaboration among governments and investors to create a strong system that will help young graduates to contribute to the GCC workforce in the future.[18]

Some progress has been achieved with, for example, several initiatives being launched in vocational training with a focus on sustainability. These include:

DEWA Academy

Dubai Electricity and Water Authority (DEWA), in cooperation with the UK's Business and Technology Education Council (BTEC), launched the DEWA Academy with the aim of educating and training young Emiratis in technical issues relating to the production and distribution of energy and water. The Academy, it is expected, will enable the development of technical support skills and strengthen Emiratization policies. As part of its mission, DEWA provides scholarships to students for degrees in electrical engineering and mechanical engineering in collaboration with various universities. Furthermore, DEWA has selected 15 students to participate in the Solar Energy Program launched in collaboration with the Arizona State University in the US.

Qatar Green Building Council

Qatar's Green Building Council was set up in March 2016 and is a member of the Qatar Foundation for Science, Education, and Community Development Program. It has initiated a comprehensive vocational training program that aims to develop the quality of training in sustainability and green building practices. This program also aims to raise awareness about sustainability and green buildings in Qatar. The program consists of courses and workshops in keeping with international standards. Various topics related to green buildings such as sustainability, building rating systems, and the adoption of green building process are studied as part of program.

The Meeting of the Ministers of Education in the GCC held in Doha in February 2015 discussed the common challenges in the education sector and how to overcome them to further the development of the sector. One of the key challenges as highlighted by the GCC Secretary General during the meeting was poor curriculum development, which could hold back the GCC education systems from keeping pace with those of other countries in the world and the challenges of globalization. There

in-gulf-states/.

18. Ibid.

is thus a need to both continuously review the current curriculum as well as accelerate the process of its development.[19]

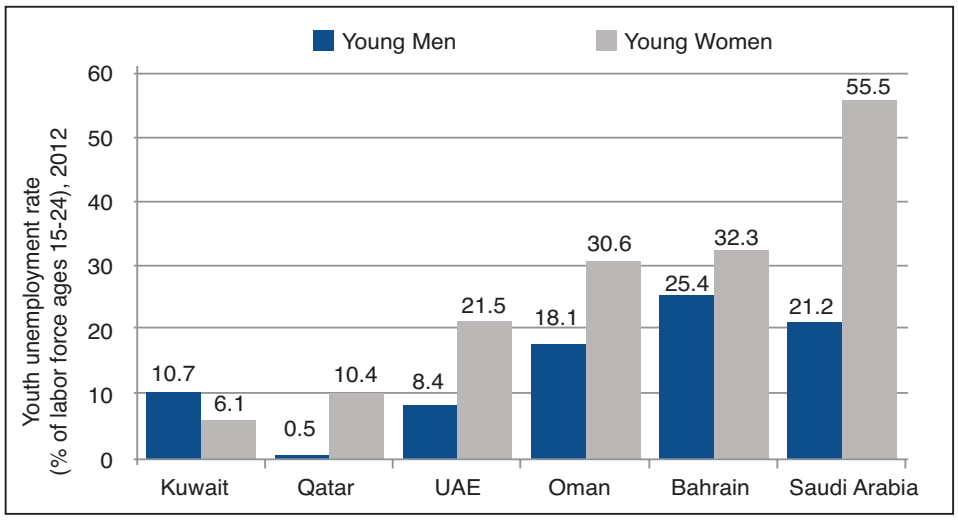
SDG No. 5: Achieve Gender Equality and Empower All Women and Girls

Women are an important part of every society. In the GCC, huge strides have been made in women empowerment. Women from different parts of Saudi Arabia were elected in the first municipal elections that allowed women to vote and stand as candidates.[20] According to statistics released by the Saudi Ministry of Education, women account for 52 percent of university graduates in Saudi Arabia, and more than 35,000 Saudi females studied abroad in 2014. The UAE government restructured its Council of Ministers in early 2016 and now includes eight female ministers, including the Minister of Youth Shamma bint Suhail bin Fares Al Mazroui.[21] Similar strides have been taken in all the GCC states.

Yet, about 6.9 million educated women in the GCC region are unable to find job opportunities. Overall, men represent a higher percentage of the total workforce (84 percent) compared to a female labor participation rate of only 29 percent. Qatar has the highest rate of female participation in the labor force among the GCC countries at 51 percent, followed by UAE with 47 percent, Kuwait 44 percent, Oman 29 percent, and Saudi Arabia at 20 percent.[22]

19. M. Azwin, "Gulf States Discuss the Problems of Education in Doha," available at: http://www.aljazeera.net/news/arabic/2015/1/8/دول-الخليج-تناقش-بالدوحة-مشكلات-.
20. "Saudi Arabia: 20 Women Won in Municipal Elections," *Al-Arabiya,* December 14, 2015, available at: http://www.alarabiya.net/ar/saudi-today/2015/12/14/سيدة-20-فوز-السعودية-الانتخابات-في-البلدية.html.
21. F. Hani, "8 Female Ministers in the New Government of the UAE," *Al-Bayan,* available at: http://www.albayan.ae/across-the-uae/news-and-reports/2016-02-11-1.2571073.
22. Al Masah Capital Management Limited, *GCC - Women Improving the Odds,* 2015, available at: http://almasahcapital.com/uploads/report/pdf/report_131.pdf.

Figure 5: Men and women youth unemployment rate in GCC



Source: Rösler and Eide 2014.

Besides, women in the Gulf region continue to have low representation rates when it comes to high positions. For example, only between 7 percent and 22 percent of legislators, senior officials, and managers in the region are female. The lowest percentage is in Qatar and Saudi Arabia (7 percent). Factors that cause such low participation include socio-cultural customs and various restrictions in place within individual GCC states.

It is worth mentioning here that the growing presence of working women is beginning to reshape the tradition of the Saudi marriage contract, a document drawn up by families ahead of an engagement. Already a growing number of women are divorcing husbands who are not supportive of their ambitions. Divorce rates in Saudi Arabia have skyrocketed in recent years, and government statistics indicate that the wives' desire to work is a flashpoint. Local media reports state that in 2011 some 40 percent of khula divorces — those in which the wife asks for separation — came after a husband forced her to quit her job.

SDG No. 6: Ensure Availability and Sustainable Management of Water and Sanitation for All

The GCC countries have scarce water resources. According to the UN, all the GCC countries, except Oman, fall in the category of "acute scarcity." The limited availability of freshwater in the Gulf in general has for decades presented a major challenge to the people and the governments of the region. The unsustainable extraction of water in countries like Saudi Arabia, Oman, and the UAE was one of the main reasons for

water scarcity in the region.[23] Scanty rainfall together with a high rate of evaporation and consumption has led to significant and mounting deficits in the water budgets.

Table 4 shows the percentage of the population with access to improved sanitation facilities in the GCC countries. Overall, there has been significant progress in the GCC region regarding access to sanitation facilities between 1990 and 2012, including a 5 percent decrease in the urban population without access to clean water between 1990 and 2012.[24]

Table 4: Percentage of population with access to improved sanitation facilities

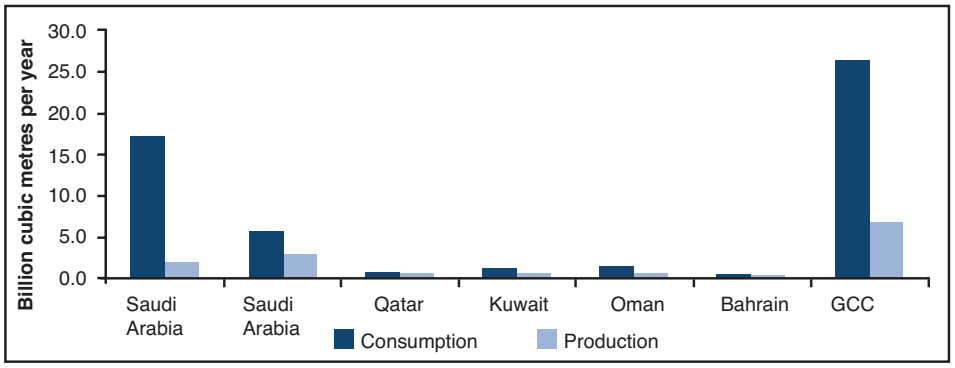
Countries	% of population 2011-2015
Bahrain	99
Qatar	98
Oman	97
UAE	99
Saudi Arabia	100
Kuwait	100

Source: World Bank 2015, World Population Data Sheet.

The GCC countries consume the highest amount of water per capita in the world. The agricultural sector alone accounts for 80 percent of overall water consumption with the domestic and industrial sector making up the remaining 20 percent. Given the steady population growth, water usage in these countries is estimated to continue to increase up to 2025, although some decrease in the agricultural sector is expected due to the phasing out of certain agricultural practices.[25] The GCC countries mostly rely on desalination plants to meet their domestic water demand. As Figure 6 shows, water consumption patterns in the GCC are well above that of local production. Figure 7 further shows the projected sectoral water usage in the GCC countries in 2025.

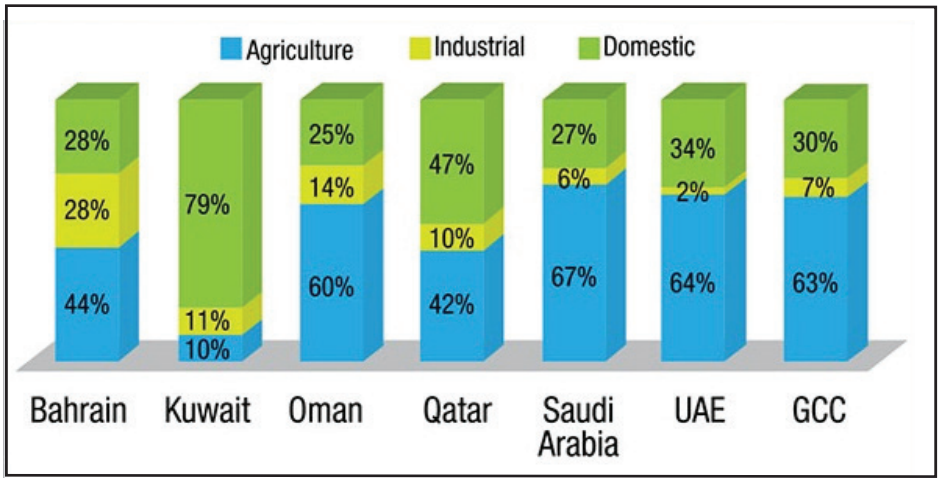
23. Construction World, "Water Wars," February 2015, http://www.constructionworld.ae/News.aspx?nId=SxkLBpgL9sta9jUAvdtbww==&NewsType=Water-wars-India-Sector.
24. Ali Karnib, Carol Chouchani Cherfane, and Dony ElCosta, "Regional Cooperation Mechanism (RCM) Issues Brief for the Arab Sustainable Development Report," ESCWA 2015, 23, available at http://css.escwa.org.lb/SDPD/3572/Goal6.pdf.
25. A. El Safty, "Implementation of Sound Policies to Secure the Future Supply of Water in the Arabian Gulf Region," 2013, available at: http://behereonline.com/sectors-72/implementation-of-sound-policies-to-secure-the-future-supply-of-water-in-the-arabian-gulf-region.

Figure 6: Water consumption and production in GCC, 2014



Source: Frost and Sullivan 2015.

Figure 7: Projected sectoral water usage in the GCC (2025)



Source: El Safty 2013.

Faced with the need to reduce water consumption, the GCC governments have launched numerous initiatives in the water sector. Some examples are:

Integrated water management strategy

The Committee of Water and Agricultural Strategy in Abu Dhabi has launched a water resources management strategy as a part of Abu Dhabi's 2030 agenda. The aim of this strategy is to reduce the pressure on water resources due to the increase in population and to improve the standards of life in the Emirate of Abu Dhabi.[26]

26. *State of Environment Report UAE* (2015), available at www.moew.gov.ae.

National program on efficiency of water consumption

The UAE Ministry of Environment and Water allocated Dh8 million in the Strategic Plan of the Ministry from 2011 to 2013 to an initiative for the assessment of groundwater and for another initiative to increase efficiency and sustainability of rainwater harvesting for the development of groundwater storage. The ministry coordinated with local authorities regarding the management of water resources, to organize the drilling process of groundwater wells through legislation. In addition, the ministry announced fines for those who violate laws by drilling wells without a permit or by exceeding the maximum drilling limit. Besides, the UAE Environment and Water Minister Dr. Rashid Ahmed bin Fahd issued a decision in 2012 to ban the export of bottled water from groundwater as a means to control depletion rates.

The GCC governments have also begun to rationalize water consumption by adopting sliding tariffs for water usage in the municipal sector.[27] The UAE is the first country in the GCC that has introduced a new tariff to discourage water waste: the Abu Dhabi Distribution Company has increased the water tariffs about 6.5 percent from Dh9.90 per cubic meter to Dh10.55. Furthermore, in July 2015, the UAE gradually withdrew the subsidies on petroleum products and was followed by Saudi Arabia, Oman, and Kuwait. The main aim of increasing water tariffs is to encourage people to consume water in moderation and to protect the environment.[28]

Given that the GCC countries share underground aquifers, emphasis must be placed on working together to better utilize them in a sustainable way. There is plenty of room for cooperation on many aspects related to the water sector such as monitoring and utilization of groundwater tables, recycling, water desalination, joint water research and projects, and the use of renewable energies in water desalination.

A better understanding of the nexus between water and energy will further improve harmonization of energy and water governance, policies, and management. Such coordinated local, national and regional policies can lead to more efficient and cost-effective provision of water and energy services as well as rationalization of their usage.

27. "The Ministry of Environment and Water Decide to Adopt a Strategy to Promote Water Policy and Improve the Efficiency of Water Demand Management," Environmental Center for Arab Towns, 2014, available at http://www.envirocitiesmag.com/articles/water-is-life/efficiency-water-demand-management.php.
28. H. Haider, "Abu Dhabi Hikes Water Charges on Over Consumption," *Khaleej Times,* January 4, 2016, available at http://www.khaleejtimes.com/nation/general/use-it-wisely-or-pay-more-for-water-power-in-capital.

SDG No. 7: Achieve Access to Affordable, Reliable, Sustainable and Modern Energy for All

The GCC governments face common challenges when it comes to energy despite being the foremost producers of energy in the world. The GCC countries are major gas and oil producers, accounting for approximately 40 percent of the world's proven oil reserves and 23.6 percent of the world's proven gas reserves, and their energy sector is mainly based on fossil fuel energy resources. Still, current issues include energy security; a decline in export capacity coupled with a rise in domestic energy consumption; rising subsidy bills; and increased pollution.

As the GCC countries have to find an alternative to reduce their dependency on the oil industry, the SDGs provide a good opportunity to make use of available natural resources – especially the high solar radiance. In order to ensure access to affordable, sustainable, and reliable modern energy services, the GCC needs to see a significant increase in renewable energy, improvements in energy efficiency, and phasing out of inefficient fossil fuel subsidies that encourage wasteful consumption. On the positive side, there has already been a dramatic shift towards energy diversification, with more research and initiatives being launched in the field of renewable energy in the past decade. The GCC countries have further begun to lead the Arab region toward renewable energy, boosting the transition to a low carbon economy.[29]

In fact, the GCC countries realized the importance of shifting towards a green economy earlier than many other countries. In 2006, the UAE, for example, started to think about green solutions with projects like Masdar. In January 2015, the UAE's Cabinet approved a decision to implement the Green Growth Strategy, which aims to ensure the country's status as a global hub and successful model for the green economy and provide a sustainable environment. Other GCC countries too have the same potential to be role models when it comes to the green economy.

In principle, almost any type of alternative energy (geothermal, wind, solar and biofuels) can be utilized in the GCC. Solar energy, especially, is technically and economically feasible. The prospects are very promising as the average direct natural exposure to sunlight in the GCC is about 1,800 kilowatt/hours per square meter. Many projects have been launched in recent years in the field of solar energy. In the UAE, for instance, solar energy is already used to power parking meters and offshore buoys as well as water heaters and air conditioners in hotels.

29. Middle East Solar Industry Association, "A Trillion Dollar Opportunity," CSR Special Report, MESIA Newsletter, July 28, 2015, http://www.mesia.com/newsletter/july2015/newsletter_files/report.pdf.

Figure 8: A parking meter in Dubai

Source: Author.

All applications of solar power, especially the two common methods – Concentrated Solar Power (CSP) and Thin Film PV Cells – are feasible and applicable in the GCC. CSP requires large-scale plants in the desert while Thin Film PV Cells can play an important role in generating electricity in buildings as well as help remote rural communities, which are not connected to the grid, achieve self-sufficiency. New applications being introduced can depend on hybrid stations that work on solar power in the morning and by wind power during the evening. From a job creation point of view, research shows that for every one megawatt of solar energy, 15 jobs will be created across the value chain.

The Arab Gulf region has all the elements for success in the field of renewable energy. Labor is cheap, funds can be secured, and technology is being developed through companies like Masdar. Most importantly, there is political will. In addition, renewable energy technology costs are falling at the same time that demand is growing. It is also worth mentioning here that moving toward a green economy does not necessarily mean depending on modern technology only. In many cases, the use of cheap, sustainable, traditional local knowledge can be smarter and greener. For instance, traditional techniques of shading, lighting, and building designs can be more effective, cheap, and greener.

The main issue that has slowed the process of energy management in the GCC region is the lack of highly skilled engagement among the GCC states.[30] The establishment of the GCC power grid is one of the most important common projects benefitting all countries associated with it. In addition to being able to draw on excess power during periods of emergency, the grid lays the foundation for a common GCC energy market. It enables power plants to be built at the most suitable sites and, as a result, avoids and/or reduces the overall level of environmental pollution in the region. In addition, connecting national networks provides a basis for integration in other aspects such as renewables, railways, customs, and markets.

Numerous other initiatives with regard to the energy sector have been launched such as:

Integrated energy management strategy

The Dubai Supreme Council of Energy and the European Federation of Agencies and Regions for Energy and the Environment (FEDARENE) signed a Memorandum of Understanding (MoU) at the World Future Energy Summit (WFES) in Abu Dhabi in January 2016. The MoU outlines that both sides will share and exchange experiences regarding the energy sector including in areas such as policy making, technology development, green-financing mechanisms, awareness programs, green buildings, smart homes, and energy management and efficiency. The two parties also agreed to organize joint activities relating to energy demand management and challenges in the energy sector. Saeed Mohammed Al Tayer, Vice Chairman of the Dubai Supreme Council of Energy, stated: "Energy efficiency has gained a lot of importance over the last few years and has become a critical competitiveness factor. Our partnership with FEDARENE will promote the implementation of innovative and effective measures, and increase awareness on energy efficiency and demand side management." He further noted: "The Dubai Integrated Energy Strategy 2030 aims to diversify Dubai's energy mix to include 25% from solar energy, 7% from clean coal, and 7% from nuclear power, and 61% from natural gas by 2030, and reduce energy use by 30%."[31]

30. Glada Lahn, Paul Stevens, and Felix Preston, "Saving Oil And Gas in the Gulf," Chatham House Report, London, 2013, available at: https://www.chathamhouse.org/sites/files/chatham-house/public/Research/Energy,%20Environment%20and%20Development/0813r_gulfoiland-gas.pdf.
31. "Dubai Supreme Council of Energy Signs MoU with European Federation of Agencies and Regions for Energy and Environment (FEDARENE) at WFES," Dubai Supreme Council of Energy, available at: http://www.dubaisce.gov.ae/NewsDetails.aspx?id=161.

The Dubai Clean Energy Strategy 2050

The Dubai Clean Energy Strategy 2050 was launched by HH Shaikh Mohammed bin Rashid Al-Maktoum, Vice President and Prime Minister of the UAE and Ruler of Dubai, with the objective of ensuring 7 percent of the Emirate's energy from renewable sources by 2020, 25 percent by 2030, and 75 percent by 2050. Dubai is the first city in the MENA region that has established such a specific strategy with clear targets.

The "Dubai Smart" initiative

HH Shaikh Mohammed bin Rashid Al-Maktoum also launched the "Dubai Smart" Initiative to make Dubai one of the smartest and greenest cities on the globe. As part of this initiative, HH Shaikh Hamdan bin Mohammed bin Rashid Al-Maktoum, Crown Prince of Dubai, issued Resolution No. 46 in 2014 allowing customers to install photovoltaic panels in their buildings to produce electricity from solar energy. DEWA has issued the required standards for the installation of solar energy and called for manufacturers to submit applications for accreditation. Furthermore, DEWA has launched three initiatives that support the Smart Dubai initiative: Shams Dubai, Smart Applications and Meters, and the Green Charger. Shams Dubai aims to motivate the citizens of Dubai to install PV solar panels to generate electricity, while the Green Charger initiative aims to build infrastructure for electric vehicle charging stations.[32]

National program on efficiency of energy consumption

The Saudi National Energy Efficiency Program aims to conserve around 1.5 million barrels of oil daily by 2030. The program is currently developing three main sector initiatives relating to building, road transport, and industrial sector, which consume more than 90 percent of energy.[33]

The program aims to use best practices that provide the most appropriate degree of energy efficiency of air conditioners, thermal insulation materials, lighting, and household appliances. Furthermore, it is developing a new mechanism to monitor air conditioner systems and ensure that they are in line with Saudi standards. The program coordinates with the National Building Code to update the standards relating to energy efficiency and to make sure of the application of the code. Finally,

32. "DEWA Invites Residential and Building Owners to Use Shams Dubai," DEWA, 2015, available at: https://e-services.dewa.gov.ae/NewsHist/details.aspx?id=02559449000000000000000 2559449.
33. "Program Work Areas," Saudi Energy Efficiency Center, 2013, available at: http://www.seec.gov.sa/2013/03/26/البرنامج-عمل-مجالات/.

the program aims to increase energy efficiency and consumption in the industry sector (cements, steel, petrochemicals), given that this sector consumes around 80 percent of energy.

Other renewable energy projects

Other projects in the field of renewable energy include Shams 1, one of the biggest solar plants in the world and the first solar plant in the Middle East and North Africa. This plant in the western region of Abu Dhabi Emirate can generate about 100 megawatts. It includes 258,000 reflective mirrors and 768 solar complexes. The Shams plant is expected to generate enough energy for 20,000 homes and prevent the emission of 175,000 tons of carbon dioxide annually. Sir Bani Yas is a natural island that is located about 250 kilometers southwest of Abu Dhabi city. It houses a plant that produces electricity from wind energy with a capacity to reach 20 to 30 MW. Noor 1, located east of the city of Al Ain, is an electricity station that uses solar cells and produces about 100 megawatts of electric power. The plant can generate 170 gigawatts of electricity per hour.[34]

Overall, the GCC countries are making significant progress in increasing energy efficiency. At the same time, a lot of work remains. Key questions include whether the increase in the energy costs in the GCC countries could affect the consumers negatively, to what degree the lifestyle of nationals will be affected, and whether there are any suitable mechanisms that compensate consumers for this increase in energy costs.

SDG No. 8: Promote Sustained, Inclusive and Economic Growth, Full and Productive Employment and Decent Work for All

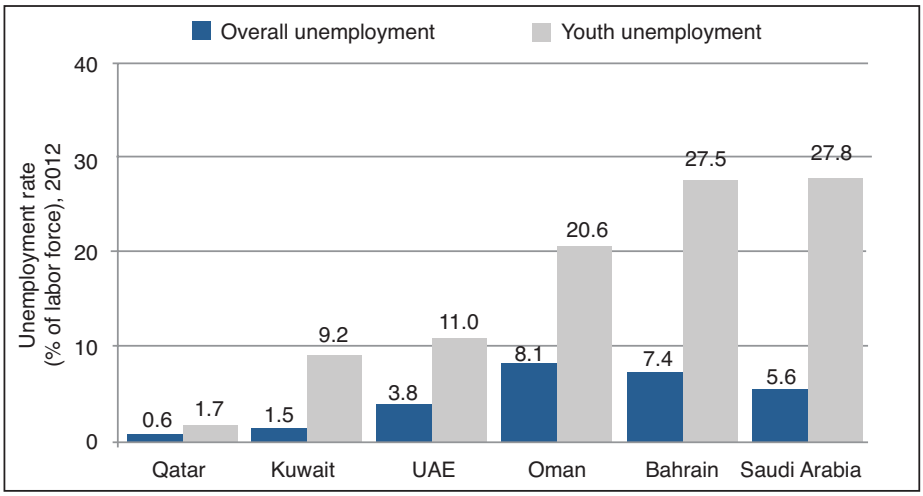
The goal of productive employment is extremely challenging for the GCC especially in terms of reducing youth unemployment. There is a need to develop a global strategy for youth employment and implement the ILO Global Jobs Pact by 2020.

Addressing the youth employment agenda in the GCC countries requires more than simply focusing on economic growth.[35] Despite the high oil price environment of the past decades that saw numerous infrastructure projects being completed as well as higher investments in education, the rate of youth unemployment has remained high, and, in fact, it has risen. According to the World Bank, youth unemployment

34. "Evolving Technologies, Smart Grid," PowerWise, available at: http://www.powerwise.gov.ae/ar/research/why-save-electricity/positive-future-outlook/evolving-technologies.html.
35. P. Rösler and E. Eide, "Rethinking Arab Employment: A Systemic Approach for Resource-Endowed Economies," World Economic Forum, 2014.

in the GCC states has increased to more than 50 percent compared to the overall unemployment rate in 2012.[36]

Figure 9: Youth unemployment rate in GCC



Source: Rösler and Eide 2014.

According to the International Monetary Fund (IMF), the decline in oil prices is expected to affect oil exporting countries and reduce the labor force in the public sector. Overall, the unemployment rate in the GCC region is expected to increase from 12.75 percent to 16 percent by 2020. The IMF also stated:

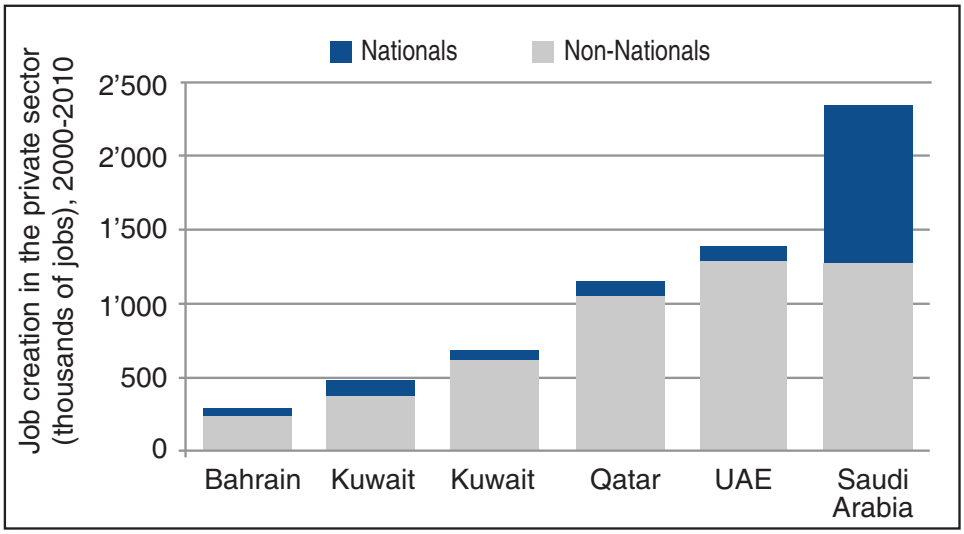
> "If private sector job growth were to follow past trends, and public sector employment growth is consistent with the current fiscal projections, more than half a million job market entrants will end up being unemployed, in addition to the 1 million who are already out of work." The IMF indicated that the private sector will have to be the main source that creates new jobs, stating also that there is a demand to expand the private sector and grow the diversity of the economy in the GCC region.[37]

One reason for youth unemployment is the high rate of non-nationals in the private sector workforce of the GCC countries. Non-nationals are viewed as having a higher degree of experience; they tend to cost less and are considered to have a higher work ethic than nationals. The discovery of oil in 1973 led to a rapid expansion of projects and, as a result, a high demand for workers. Without the necessary skills,

36. World Bank, *World Development Indicators.*
37. Gulam Ali Khan, "GCC Jobless Rate to Touch 16% by '20: IMF," *Muscat Daily,* October 25, 2015, available at: http://www.muscatdaily.com/Archive/Business/GCC-jobless-rate-to-touch-16-by-20-IMF-4dq2.

most GCC nationals were absorbed into the public sectors of their respective countries with oil wealth being distributed to the citizens without them having to participate actively in the labor market. The result of this process can be seen today in the huge gap that exists between the jobs sought by young nationals and the labor market's demand. In order to be able to reverse the trend and achieve employment goals, young GCC citizens will have to change their approach and mindset in order to succeed in the global job environment.[38]

Figure 10: Between 2000 and 2010, non-nationals took about 80% of jobs in the private sector in the GCC countries



Source: Rösler and Eide 2014.

The problem of youth unemployment has been recognized by governments, and numerous initiatives have been launched. Jadarah, for example, is a system established by the Saudi Ministry of Civil Service to assist citizens to register their personal details, qualifications, and work experience, and to be able to apply electronically for vacancies that are advertised by government agencies and match their specialties and expertise. TAQAT (Hafiz program) is another Saudi program that enables citizens to find jobs. This program intends to provide employment support as well as financial assistance up to SAR2,000 monthly alongside training while searching for a job. This is in addition to the Nitaqat program which aims to encourage employers to hire Saudi workers as well as imposes fines on those companies that do not.[39] Absher is a UAE initiative with the aim of creating jobs for Emirati citizens. The program works

38. Rösler and Eide, "Rethinking Arab Employment."
39. Nitaqat Guide, Saudi Ministry of Labor, 2014, available at: http://www.emol.gov.sa/nitaqat/nitaqat.pdf.

with the public and private sectors to create jobs for UAE citizens in different sectors as well as to provide training and upgrading of skills. The program also seeks to fill the gap between the public and private sectors in terms of salaries and benefits.

The government of Kuwait has a supportive private sector employment program. Furthermore, the government has targeted the wages gap between the public and private sectors by providing financial incentives to nationals who work in the private sector.[40] Most GCC nationals look for jobs in the public sector, due to the wage discrepancy between the public and private sectors. However, this situation needs to change to support both public and private sectors in growing the economy in a sustainable manner and to provide more jobs for nationals in the private sector. Also, the high immigration rate in the GCC region has encouraged non-nationals to work in the private sector.

According to the IMF, the private sector in the GCC is expected to grow and provide around 600,000 new jobs for nationals by 2019. There is also a demand for collaboration between human resources departments and universities and colleges to set the skills needed by companies that are available within the national labor market.[41] In addition, the employment and salary trends in the GCC region might face serious challenges in the near future due to the severe budget deficits. Based on Gulf Talent's survey of employers, the increase in salary has slowed down in 2016 to an average of 5.2 percent, which is considered the slowest average increase for more than a decade. There is also an increase in the cost of living in the GCC countries due to the slow increase in salary and the increase in prices of fuel and other goods and services as well as the removal of subsidies.[42]

SDG No. 9: Build Resilient Infrastructure, Promote Inclusive and Sustainable Industrialization and Foster Innovation

Goal number 9 is closely linked to goals 11 and 12 as all three tackle aspects of sustainable development. The aim here is to assure the sustainability of the global economic system alongside the sustainable use of resources, which in turn supports the entire society and their well-being. At the same time, it must be considered that infrastructure needs are met by the flow of materials and energy and, as a result, this process also has an environmental impact.[43]

40. O. Gulseven, "Challenges to Employing Kuwaitis in the Private Sector," Gulf Affairs, *Labor Market Dynamics in the GCC States,* Autumn 2015, available at: http://www.oxgaps.org/files/analysis_gulseven.pdf
41. Adam Bouyamourn and Sean Cronin, "Private Sector Needs to Adopt a More Sustainable Approach to Hiring Gulf Nationals, Says New Study," *The National,* February 24, 2016.
42. Gulf Talent, "Employment and Salary Trends in the Gulf," 2016, 13.
43. ICSU, ISSC, *Review of the Sustainable Development Goals,* 2015, available at: http://www.icsu.

The Gulf countries have significantly expanded their road and transportation systems to meet the needs of a growing population. Overall, an infrastructure that can support continuous economic development has been put in place.[44]

There have also been various initiatives in the field of innovation. Numerous universities, institutes, and foundations have been established in the GCC countries to promote effective science, technology and innovation programs. This includes the Kuwait Foundation for the Advancement of Science, Qatar Foundation, the MASDAR Institute in the UAE, and the King Abdullah University of Science and Technology (KAUST) in Saudi Arabia.

Other recent initiatives in this regard include HOPE, the first UAE project to explore Mars and the first Arab and Islamic project of its kind that aims to launch a space probe to explore other planets as well. The planning and implementation of the project will be headquartered in the UAE with the team trained in cooperation with specialized academic bodies. This project is part of an overall effort by the government of UAE to be one of the leading countries in the field of space technology by 2021. It will involve about 200 research institutes in a joint effort to promote local talent and create a generation of experienced scientists.

The Intelligent Traffic Management System proposed by the High Commission for the Development of Riyadh has collaborated with the Regional Traffic Department in Riyadh to implement a state-of-the art project that seeks to reduce the rate of congestion on the Riyadh road network. Implementing such a system will significantly aid in handling one of the major problems facing urban development in the region.

In the meantime, research programs have also been instituted on green technologies. Masdar Institute of Science and Technology and the Norwegian company EnergyNest AS, for example, have signed an agreement to conduct further research on the thermal energy storage (TES) pilot facility at the Masdar Institute Solar Platform (MISP). This agreement is a great opportunity for both sides to appoint support personnel and ensure sustainable operation of the TES pilot facility. Dr. Behjat Al Yousuf, Interim Provost, Masdar Institute, stated that: "The agreement with EnergyNest to appoint support personnel further consolidates our efforts to lead research in solar energy technologies as directed by the UAE leadership. We

org/publications/reports-and-reviews/review-of-targets-for-the-sustainable-development-goals-the-science-perspective-2015/SDG-Report.pdf

44. Kannan C. Chandran, "GCC Surface Transport Report June 2011 : An Overview of Transport - Road and Rail," Ventures Middle East, June 2011, https://www.scribd.com/document/251027200/Gcc-Surface-Transport-Report-June-2011.

believe the agreement will move the project to its next stage and expedite the process towards achieving sustainable solutions."[45]

With the Gulf region already considered as one of the most urbanized parts in the world, with about 70 percent of the population living in urban areas (including nearly 100 percent in Kuwait and Qatar), the fact that the population of the GCC countries is projected to increase from the current 53 million to over 66 million by 2030 (see Table 2) will generate more challenges such as water shortages, affordable housing, energy consumption, and air quality. Therefore, urban growth in the GCC countries has to be managed to prevent chaotic unstructured development and to apply more sustainable solutions.[46]

SDG No. 10: Reduce Inequality within and among Countries

This goal aims to empower the social, economic, and political inclusion of all by 2030, without discrimination based on gender, race, or religion. The aim here is to lift people out of poverty and provide equal access to health and education services and other assets. While there has been a reduction in income inequality among countries, there is at the same time an increase of inequality within countries. Therefore, there is a demand to reduce inequality by setting policies and paying more attention to the disadvantaged population's needs.[47] For the GCC countries, closer integration is seen as a tool that will empower the region and help in promoting sustainable development. Qatar and Kuwait already show high economic participation rates in the Middle East, although they rank less favorably in terms of health and political empowerment. Bahrain, Oman, and the UAE are all leading countries in the education category. In terms of the income indicator in the Middle East region, Qatar ranks first, followed by UAE, and then Kuwait. Saudi Arabia, meanwhile, has a very low economic participation rate in the Middle East.[48]

45. WAM, "Masdar Institute and EnergyNest Agree to Further Intensify Research Activities at MISP's Thermal Energy Storage Pilot Facility," February 24, 2016, https://www.wam.ae/en/news/emirates/1395292018634.html.
46. E. Ramadan, "Sustainable Urbanization in the Arabian Gulf Region: Problems and Challenges," *Arts Social Science Journal* 6 (2015): 109, available at: http://www.omicsonline.com/open-access/sustainable-urbanization-in-the-arabian-gulf-region-problems-and-challenges-2151-6200-1000109.pdf.
47. UN, "Sustainable Development Goals, Goal 10: Reduce Inequality within and among Countries, 2015" http://www.un.org/sustainabledevelopment/inequality/.
48. Margareta Drzeniek-Hanouz, "Top 10 Most Competitive Economies in Middle East, North Africa," World Economic Forum, 2014, available at https://www.weforum.org/agenda/2014/09/top-10-competitive-economies-middle-east-north-africa/.

In addition, the majority of low-income workers in the GCC countries are migrant workers.[49,50] A large number of these workers are dealing with several inequality issues. For instance, many low-income migrants are suffering from lack of healthcare, poor housing provided by employers, unpaid wages, long working hours, and lack of safety.[51,52] Therefore, there is a demand to address the poor migrant workers' issues and set the right policies, taking into account the wealth gap issues.[53]

In general, this goal is not a major issue for the GCC countries, though on the global level, to reduce inequality, policies should be universal, paying attention to the needs of disadvantaged and marginalized populations.

SDG No. 11: Make Cities and Human Settlements Inclusive, Safe, Resilient and Sustainable

Nowadays, more and more people are moving to the cities. Experts predict the world's urban population will double by 2050. As the planet becomes more urban, our cities need to get smarter to handle this large-scale urbanization and meet citizens' needs and aspirations for an improved quality of life, reduced pollutants, increased efficiency, better services, and reduced costs of living.

According to UN Habitat, the GCC is one of the most urbanized areas in the world, with more than 70 percent of the population living in urban areas; Kuwait and Qatar are almost 100 per cent urbanized. Urban expansion in the region has been filled both by both internal migration and the influx of expatriate workers attracted by the region's economic prosperity and employment opportunities.

49. Human Rights Watch, *For a Better Life: Migrant Worker Abuse in Bahrain and the Government Reform Agenda,* (2012), available at https://www.hrw.org/report/2012/09/30/better-life/migrant-worker-abuse-bahrain-and-government-reform-agenda.
50. Ryan Jones, "Beyond Kafala: Remedying Human Rights Abuses of Migrant Workers in the Persian Gulf," Rapoport Center Human Rights Working Paper Series January 2016.
51. Maria Kristiansen & Aziz Sheikh, "The Health of Low-Income Migrant Workers in Gulf Cooperation Council Countries," *Health and Human Rights Journal* (July 22, 2014), http://www.hhrjournal.org/2014/07/the-health-of-low-income-migrant-workers-in-gulf-cooperation-council-countries/.
52. Jones, "Beyond Kafala."
53. Ibid.

Table 5: Urban and rural population in GCC (2014)

Country	Urban Population (2014)	Rural Population (2014)
Saudi Arabia	83%	17%
UAE	85%	15%
Kuwait	98%	2%
Bahrain	89%	11%
Qatar	99%	1%
Oman	77%	23%

Source: World Bank, Urban development, Urban population (% of total)

Across the Arabian Gulf, cities and municipalities are facing a wide range of challenges as businesses and citizens demand better, more efficient, and more flexible services. In order for the region's cities to be sustainable, they have to start with the users and better understand their needs. Sustainable cities are defined by their innovation and ability to solve problems. It is important to understand that solutions do not need to involve the use of modern technology in every aspect. In the Gulf region, understanding and respecting local cultures and traditions is an important component. In fact, traditional knowledge and practices (such as in old urban districts, buildings, transportation, and irrigation systems) can often deliver faster, more reliable, cheaper, and more environment-friendly services for citizens.

The urban population in the Gulf region is growing more rapidly than the overall populations, which shows the need to pay attention to the development of urban areas. Managing urban growth is one of the priorities for the GCC countries as they seek to achieve sustainable development in their communities.[54]

There are currently many initiatives across the region to establish sustainable cities. This trend is likely to continue given the rapid economic growth. In the UAE, both Abu Dhabi and Dubai have strategic plans. Abu Dhabi's Vision 2030 sets key targets for the emirate's development over the next 25 years, with a central focus on investment and urban development with green building codes (Estidama and the Pearl rating system). Masdar City is aiming to be one of the world's most sustainable urban developments. In Dubai, there are smart cities being created such as Dubai Healthcare City, International City, Sports City, Dubailand, and Dubai Waterfront. Another sustainable city project is Dubai Silicon Oasis which will be completed in

54. Ramadan, "Sustainable Urbanization in the Arabian Gulf Region."

2018. The Msheireb Project, which aims to make Doha city more sustainable while protecting Qatari culture, is among the important projects in Qatar.[55]

While the GCC countries have the required resources to implement sustainability, there are a number of challenges that need to be tackled. For example, the GCC countries have the highest number of car accidents among Arab countries. Another issue is the availability of housing. Between 52 percent and 64 percent of the national population is under 25 years of age, meaning there will be a rising demand for housing in the coming years. This is on top of the shortage of housing that already exists today. Water security is another issue that needs to be addressed.

According to the Consolidation of Sustainable Development Concept presented to a GCC workshop held in 2014, the key to achieving sustainable development in the Arabian Gulf region is implementing green buildings and environmental projects. There is an urgent requirement to raise awareness regarding the benefits of green buildings, including the reduction of pollution and increase in energy and water efficiency. Thus, it is very important to adopt short-term solutions to solve long-term problems. For example, the GCC countries should consider adopting renewable energies in the production of energy to protect the environment and reduce the effects of climate change.

Currently, many programs on sustainable buildings and construction exist such as the Estidama (sustainability) program of the Abu Dhabi Urban Planning Council (UPC). Estidama is an initiative that was established to support Abu Dhabi's Plan 2030 for sustainable development. The main goal of this program is to create a new framework for sustainability in the process of designing and planning. The UPC's Estidama team emphasizes the importance of four pillars that address sustainability: environmental, economic, social, and cultural. Also, the Ministry of Infrastructure Development of the UAE launched an initiative to set up charging stations for electric vehicles in February 2016. This initiative will help to reduce environmental pollution and enable protection of the environment.

In Qatar, the Minister of Environment Ahmed Amer Mohammed Alhumaidi issued the Qatar Construction Specifications (QCS) 2014, which was launched in May 2015. The committee that oversees this consists of 120 experts, specialists, and engineers in the field of construction and infrastructure from inside and outside Qatar. The QCS is considered a primary reference for the development of the Gulf Building Code. Also, it is an international reference for arid countries in the world,

55. "Msheireb Downtown Doha Will Transform the Centre of the Capital City, Recreating a Way of Living that is Rooted in Qatari Culture," 2015, available at: http://mdd.msheireb.com/en-us/. exploreproject/projectoverview.aspx#sthash.xqRTpqMi.dpuf.

which makes it mandatory for all projects in the Gulf region and the Middle East. This legislation will help to reduce environmental pollution and depletion of water and electricity. The 2014 standards aim to improve the safety and security of high buildings so that they are able to withstand earthquakes and to develop energy insulation specifications for buildings to save energy.[56]

There are also programs to reduce the environmental impact of industry. The Responsible Care Conference, which was held in Dubai on October 12-13, 2015 by the Gulf Petrochemicals and Chemicals Association (GPCA), outlined the progress towards sustainability. Warren W. Wilder, newly appointed Chairperson of the GPCA's Responsible Care Committee, and Vice President of Chemicals, Saudi Aramco stated that the aim of this conference was to improve the safety of workers in the community, reduce costs, and, more importantly, to reduce environmental impacts. Furthermore, it sought to increase safety, performance of products, and resource efficiency. Efforts in this regard would minimize pollution, waste, and risk which in turn would help companies, customers, and communities. Responsible Care is the chemical industry's global environmental, health, safety and security initiative. The Responsible Care Committee has helped petrochemical companies for six years to improve their performance as well as the health and safety of their employees and communities and the environment.[57]

SDG No. 12: Ensure Sustainable Consumption and Production Patterns

The Agenda 21 of the Earth Summit 1992 indicates that unsustainable consumption and production patterns are the main causes for environmental degradation. Thus, changing lifestyles and unsustainable consumption patterns are the most effective strategy and solution for many of the present environmental issues.

Changing those patterns is crucial for the GCC countries, which consume many global imported products. Many of these products are not environment-friendly and drive people towards more and more consumption. This is unsustainable, unhealthy, and pollutes the environment especially with regard to the disposal process of these goods. For example, due to the unlimited foreign fast food options that are available in the GCC communities, there is an extravagance in water and energy consumption, and thousands of electronic devices are used without a proper disposal plan or

56. Al-Kuwari, "Qatar Green Legislation Deserved Appreciation," *Al-Sharq*, 2014, available at: http://www.al-sharq.com/news/details/279709.
57. "GCC Chemical Producers Emphasize Importance of HSE Programs at the Inaugural GPCA Responsible Care Conference," GPCA, 2015, The Responsible Care Conference, available at: http://www.gpca.org.ae/news/gcc-chemical-producers-emphasize-importance-of-hse-programs-at-the-inaugural-gpca-responsible-care-conference/.

recycling facilities. There are also health-related consequences in terms of increased cases of obesity, diabetes, and cardiovascular diseases.

Sustainable consumption and production in the Gulf region requires not only the involvement of the public and private sector but also civil society. Spreading awareness about the importance of sustainable consumption and production is one of the most effective ways to change unsustainable behavior. This could include organizing lectures that target different age groups as well as research and development.

Good governance is another element required in the efforts to develop appropriate policies that promote sustainable consumption and production.[58] Legislation plays a crucial role in promoting sustainable consumption and production by, for example, introducing licensing for sustainable products and adopting environmental and energy efficiency labels. In this context, the connection between promoting sustainable practices, such as reducing waste and recycling practices, and the use of new technologies and the creation of jobs needs to be understood.

Goal number 12 aims not only to achieve environmentally sound management but also to reduce waste and limit emissions in air, water, and soil. Waste is a global issue that many countries are facing.[59] Growing population patterns and high levels of urbanization have increased the demand for services such as solid waste management. Owing to acceleration in the pace of industrialization, the generation of hazardous and non-hazardous industrial wastes has increased.

For example, construction and demolition (C&D) debris represents a major component of municipal solid waste. About 45 percent of the total waste disposed in a landfill site in Kuwait is C&D waste.[60] C&D waste has witnessed a manifold increase due to the rising trend in construction, renovation, demolition of old structures, and reconstruction or expansion of the road transportation network.

As a result, achieving progress in this SDG goal is very important for the GCC states. As it stands, the GCC countries are among the countries that generate the highest solid waste per capita. The amount of solid waste generated by Qatar alone has reached 28,000 tons per day; most of it is disposed in landfills while only 3

58. AFED, *Arab Environment: Sustainable Consumption,* eds. I. Abdel Gelil and N. Saab, Annual Report of Arab Forum for Environment and Development (Beirut, Lebanon: Technical Publications, 2015).
59. "Open Working Group Proposal for Sustainable Development Goals," Sustainable Development Knowledge Platform, 2015, available at: https://sustainabledevelopment.un.org/topics.
60. Anwar F. Al Yaqout, "Assessment and Analysis of Industrial Liquid Waste and Sludge Disposal at Unlined Landfill Sites in Arid Climate," *Journal of Waste Management* 23, no. 9, (2003):817–824.

percent is recycled and 4 percent is incinerated. For the moment, there is a lack of research on waste management techniques and technology in the GCC countries.[61]

There is need to reduce, reuse, and recycle waste. The recovery of energy from waste is one effective method to manage the high volume of wastes. Several technologies can help to transform wastes into efficient energy such as conventional combustion processes and state-of-the-art plasma gasification technology. The new waste-to-energy projects provide business opportunities based on clean energy and environment-friendly methods. Different types of waste can be used for waste-to-energy plants including municipal waste, crop residues, and agro-industrial wastes.[62]

SDG No. 13: Take Urgent Action to Combat Climate Change and Its Impacts

The GCC countries account for less than 2.4 percent of global greenhouse gas emissions; however, global climate change poses severe negative impacts in the region. Rising temperatures affect agriculture and water resources; evaporation increases and, as a result, power needs rise and the demand for air-conditioning and cooling devices goes up. Rising sea levels on the Red Sea, the Arabian Gulf, and the Indian Ocean and the consequent risk of salinization of soil and coastal groundwater aquifers pose a growing threat. Countries like Bahrain and Qatar may, in fact, lose a large part of their coastal area to the sea in the future.

Climate change is of particular importance for the GCC countries because of the issue of fossil fuels which form the backbone of their economies. The industrial, energy and agricultural sectors globally depend almost entirely on fossil fuels and generate a large proportion of greenhouse gas emissions. Therefore, any actions taken in this regard may affect the demand for fossil fuels, the main source of carbon dioxide emissions, especially in the countries that adopt laws and policies to reduce emissions due to the implementation of the United Nations Framework Convention on Climate Change (UNFCC). This, in turn, will eventually severely impact the economies of the Gulf countries that rely on fossil fuels as a major source of revenue.

It is worth mentioning that all GCC governments have ambitious plans to cut greenhouse gas emissions by building more solar power plants as well as carbon capture and storage projects. There is also an effort to use more natural gas as well as adopt new standards to make buildings and cars more energy efficient.

During the Abu Dhabi Sustainability 2016 week, the UAE Ministry of Energy released the "Atlas Carbon Project," which aims to monitor all sources of greenhouse

61. S. Zafar, "Waste as Energy Resource. Waste Management, Waste-to-Energy," EcoMena, 2014, available at: http://www.ecomena.org/renewable-energy-from-wastes/.
62. S. Zafar, "Waste as Energy Resource. Waste Management, Waste-to-Energy," EcoMena, 2014, available at: http://www.ecomena.org/renewable-energy-from-wastes/.

gas emissions for the energy and industrial sector (industrial processes and uses of products), agriculture, land use change, and waste at the state level. The project provides statistical reports of greenhouse gases emissions on a national level and also the carbon dioxide index per capita. The aim of the reports is to analyze the results of emissions from various sectors in order to reduce emissions, support government decisions in the energy sector, and combat climate change. According to the emissions report, the electricity and water sector ranked first in generating GHG emissions at 35 percent, industry ranked second with 16 percent, followed by the transportation sector in third place at 15 percent.[63] Overall, this project can help in supporting the policies and legislation to reduce emissions.

This SDG goal is very ambitious and will require significant efforts from the GCC governments to reduce the GHG emissions in the region. Shifting to clean renewable energy will help in achieving this goal. Also, applying new green standards in buildings and transportation will support energy efficiency and, at the same time, decrease GHG emissions. Furthermore, implementing projects such as the Atlas Carbon Project will allow for a significant change in the future.

SDG No. 14: Conserve and Sustainably Use the Oceans, Seas and Marine Resources for Sustainable Development

The ocean plays a crucial role in achieving social, economic, and environmental sustainability. Ocean and seas account for about 70 percent of the Earth's surface area, and it is one of the important elements in climate sustainability and food production.[64]

The GCC states have undertaken numerous efforts in the field of marine protection. The Kuwait Regional Convention for Cooperation on the Protection of the Marine Environment from Pollution for the Gulf region, also known as ROPME Sea, is a prime example of regional cooperation between the six GCC countries plus Iraq and Iran for the sake of marine protection.

Water desalination processes in the GCC countries, meanwhile, have negative environmental effects on the marine ecosystem, including GHG emissions due to the use of fossil fuel for energy and the discharge of brine water to the marine environment. Most GCC countries use desalination plants as the main source for clean drinking water. These desalination plants are combined with a power plant

63. "The Ministry of Energy Launches 'Atlas Carbon' and 'Automated Energy Data,'" Al Khaleej, 2016, available at: http://www.alkhaleej.ae/economics/page/b6d10541-f8ef-4dc4-8436-3f033997ae4.
64. ICSU, *Review of the Sustainable Development Goals.*

causing the sea water temperature in the vicinity of the plant to increase. The average temperature of sea water is 35°C, but the desalination plants cause the seawater temperature to increase by 7-8°C. The GCC countries must address the impact of desalination plants on the marine ecosystem and discuss the adoption of alternative energy that could decrease the environmental impact. One approach is to foster cooperation and exchange experiences among water research centers regarding reducing the environmental impacts and adopting new desalination techniques in the GCC region.[65]

In terms of marine resources, the monitoring and management of fish stocks as well as the coastal and marine environment are areas where the GCC states are active. Research studies have indicated that fish resources are at risk, also due to excessive consumption. As a result, the Environment Agency Abu Dhabi in cooperation with the Ministry of Environment and Water has developed a program on the national level to manage the fisheries in the UAE over the next five years (2015-2019). This program is intended to restructure the commercial and recreational fishing sector management systems in order to restore the natural balance of fishery resources.[66]

In addition, in line with the current policies on fisheries with international best practices such as Agenda 21 of the United Nations Code of Conduct for Responsible Fisheries, the agency has developed a clear plan of action for the establishment of sustainable fisheries by 2030 in order to cope with the overall environmental vision on sustainable use of resources.

According to Sultan Alwan, Assistant Under-Secretary for Water Resources and Nature Conservation at the Ministry of Environment and Water, the Ministry of Environment will take legal action to control the deterioration of fish stocks and offset the acute shortage of some types of fish. Among the measures taken will be the protection of juvenile fish and the fish spawning areas, as well as the renewal of fish stocks. The ministry seeks to adopt the latest technologies in the field of aquaculture, which helps to sustain local production.[67]

65. Mohamed A. Dawoud and Mohamed M. Al Mulla, "Environmental Impacts of Seawater Desalination: Arabian Gulf Case Study," *International Journal of Environment and Sustainability* 1, no. 3 (2012): 22-37.
66. Annual Report, Environment Agency - Abu Dhabi, 2014, available at: https://www.ead.ae/Publications/Annual%20Report%202014/ANNUAL%20REPORT%20ARA%20FINAL2%20low%20rez.pdf.
67. R. Ayish, E. El-Din Awad, W. Naim and N. Mubarak, "Fish Stocks: Fortune Threatened by Human Intervention and Environmental Pollution," *Al Bayan,* 2015, available at: http://www.albayan.ae/across-the-uae/news-and-reports/2015-03-15-1.2332739.

SDG No. 15: Protect, Restore and Promote Sustainable Use of Terrestrial Ecosystems, Sustainably Manage Forests, Combat Desertification, and Halt and Reverse Land Degradation and Halt Biodiversity Loss

Arable lands and permanent crops constitute only about 1.63 percent of the total land area of 257 million ha in the GCC countries (see table 6). Desertification is still a serious issue in many countries and has negative impacts at the local, regional, and global levels. According to the Arab Environment Future Challenges Report, some governments in the Arab world have not addressed environmental degradation costs and have failed to find suitable policies for this issue.

Land degradation and desertification is certainly one of the most significant environmental problems in the GCC countries. Some countries in the region, such as Bahrain, Qatar, and Kuwait, suffer from almost 100 percent desertification.

Table 6: Land use pattern of GCC countries in 2002 (Area in 1000 ha)

Country	*Total area*	*Arable land*	*Permanent crops*	*Permanent pasture*	Forest area*			*Others*
					Natural forests	Planta-tions	Total	
Bahrain	71	2	4	4	n.s.	n.s.	n.s.	61
Kuwait	1782	13	2	136	n.s	5	5	1626
Oman	30950	38	43	1000	n.s	1	1	29868
Qatar	1100	18	3	50	n.s	1	1	1028
Saudi Arabia	214969	3600	194	170000	1500	4	1504	39671
UAE	8360	75	191	305	7	314	321	7468
Total	**257232**	**3746**	**437**	**171495**	**1507**	**325**	**1832**	**79722**

Source: FAOSTAT Data (2005).

Desertification is taking place because of many factors such as rapid urbanization and industrialization and overgrazing accompanied by mass migration towards the oil-rich states. Agricultural lands, rangelands, and coastal areas are all being used for infrastructure development such as road building, industrial expansion, and housing. In addition, desertification and environmental degradation is also closely related to water scarcity which, according to Saab, affects two-thirds of Arab countries.[68]

68. Silver Radan,"Environmental Pollution in Arab Countries Will Increase: Report" *Khaleej Times,* May 9, 2009, http://www.khaleejtimes.com/article/20090508/ARTICLE/305089930/1002.

It is worth mentioning that the Executive Bureau of the Arab Housing Ministerial and Construction Council held its 80th session at the Arab League headquarters in October 2015. The meeting was presided over by Saudi Arabia with the Saudi Housing Minister Majid bin Abdullah Hugail stating that there will be an award under the title: "Urban Planning to Ensure Sustainable Development of Urban Areas," which would be dedicated to the best scientific research in the field of housing and urban development.[69]

As part of its efforts to control desertification, the Ministry of Environment and Water (MoEW) in the UAE organized a regional workshop to discuss all national initiatives that intended to combat desertification, which is in line with the International Strategy for Combating Desertification (2008-2018). This event was the result of collaboration between the MoEW and several leading organizations such as the Secretariat of UNCCD, the Arab League, the FAO Subregional Office for the Gulf Cooperation Council States and Yemen, the Arab Center for the Studies of Arid Zones and Dry Lands, and the International Union for Conservation of Nature. The main goal of this workshop was to assist Arab countries and international and regional organizations to share and exchange information and ideas on combating desertification.

Furthermore, the UAE government has updated its National Strategy to Combat Desertification, established in 2003, in line with the UAE Vision 2021 and in response to the requirements of the United Nations Convention to Combat Desertification. The strategy aims to improve the situation of ecosystems affected by desertification and show the importance of the programs that aim to combat desertification as well as increase awareness among the public on desertification, land degradation, and drought.[70]

69. "Executive Bureau of the Council of Ministers of Arab Housing and Reconstruction Holds its Eightieth Meeting," QNA, 2015, available at: http://www.qna.org.qa/News/15100716170078/ الثمانين - دورته - اجتماعات - يعقد - العرب - والتعمير - الإسكان - وزراء - لمجلس - التنفيذي - المكتب

70. "MoEW Organizes Workshop to Strengthen National Efforts to Combat Desertification," event held in commemoration of World Day to Combat Desertification, United Arab Emirates, Ministry of Climate Change & Environment, 2014, available at: http://www.moccae.gov.ae/en/media-center/news/18/6/2014/ تنظم - والمياه - البيئة - التصحر - لمكافحة - العالمي - اليوم - مع - بالتزامن الخطط - مواءمة - حول - عمل - ورشة - الوطنية - التصحر - لمكافحة.aspx

SDG No. 16: Promote Peaceful and Inclusive Societies for Sustainable Development, Provide Access to Justice for all and Build Effective, Accountable and Inclusive Institution at All Levels

From a Gulf perspective, what are the essential conditions and enablers for a sustainable and green economy? Arguably, these can be synthesized into governance and financing. It can be argued that governance is crucial to the success of any country's development. In short, governance can be defined as the "design and execution of common activities in order to achieve common goals." In order for governance to be successful, a number of preconditions need to be fulfilled. These include: common agreement on general goals; engagement of all stakeholders in shaping and executing these goals; the adoption of various policies to achieve these goals; establishing a clear and correct allocation of authorities and responsibilities; agreeing on common rules, institutions, customs and values; and resorting to negotiation in case of disagreement between stakeholders. The 1992 Rio Conference accelerated the setting up and strengthening of environmental ministries and authorities in the GCC states, the adoption of national action plans and strategies, the mobilization of financial resources, and the development of environmental policies.

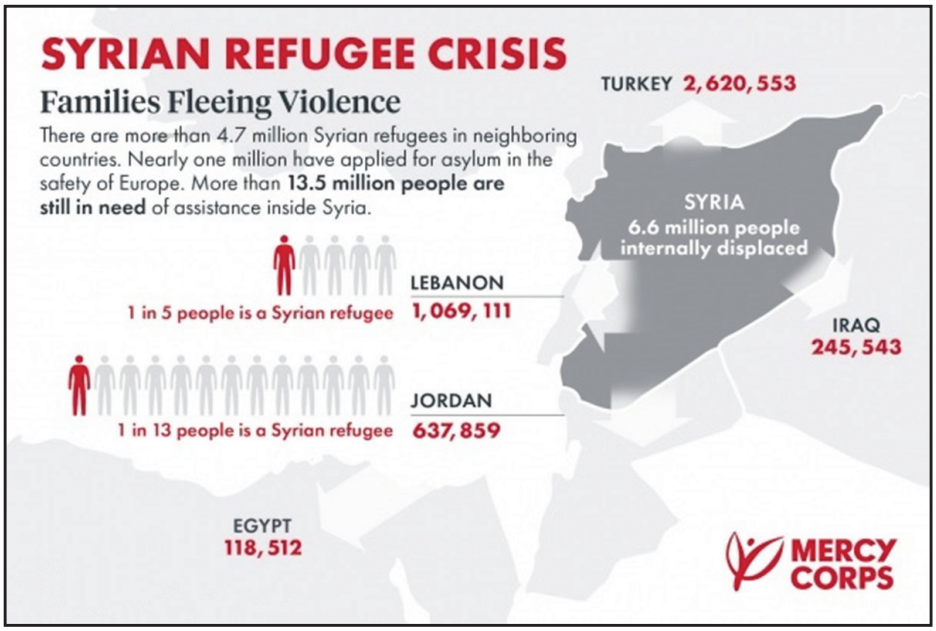
Yet, while there has been great progress in formulating and executing environmental policies in the GCC, environmental governance in general still lacks many dimensions. Environmental policies in the GCC rely mainly upon Command and Control (CAC) mechanisms rather than economic instruments. Recently, there have been various initiatives to include economic instrument mechanisms to alter incentives and change behavior, such as the water cost recovery options adopted in places such as Dubai and Abu Dhabi and the road toll system in Dubai. The GCC states also depend on persuasive mechanisms to address the moral aspects of environmental responsibility including religious and social aspects. This approach can take the form of education, risk communication, provision of information and knowledge, as well as capacity building.

Goal no. 16 also focuses on peace, human rights, and governance given that these aspects are important on the national and international levels to create peaceful sustainable societies. The goal is focused on promoting good governance that is accountable and transparent at every level.[71] Peace and justice is seen as the fundamental condition for a sustainable society.

71. UNDP, Sustainable Development Goals, Goal 16: Peace, Justice and Strong Institutions, 2015, http://www.undp.org/content/undp/en/home/sdgoverview/post-2015-development-agenda/goal-16.html.

An important issue that remains to be resolved is the current refugee crisis in conflict zones. At the regional level, the Syrian refugee crisis in the Arab region is a huge issue that needs to be tackled especially given the fact that it has been five years since the Syrian conflict started and the situation is only getting worse. The region has also seen a significant increase in the number of terrorist attacks causing further instability.[72]

Figure 11: Syrian Refugee Crisis



Source: MercyCrops, "Quick Facts: What You Need to Know about the Syria Crisis," February 24, 2016.

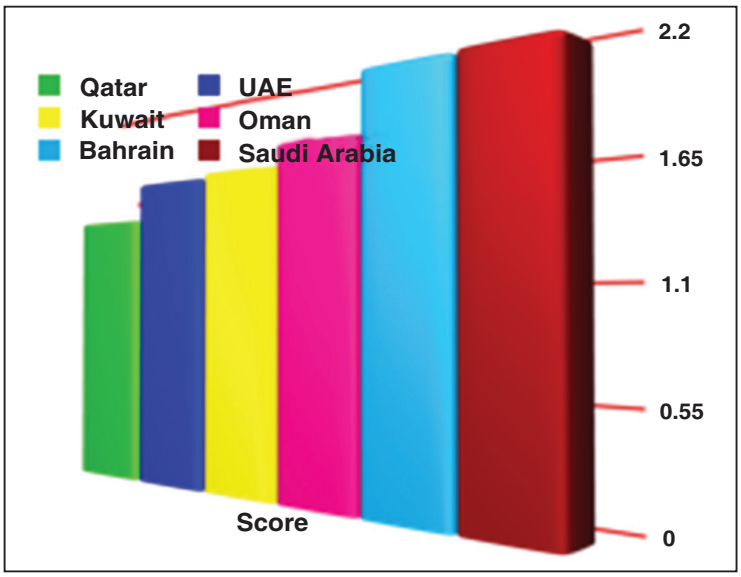
The GCC was established to support peace and security in the Gulf region in addition to fostering economic integration among the member countries. Today, the GCC plays a vital role in the Arab world and has proven its utility in the crises in Yemen, Libya and Syria.[73] According to His Highness Shaikh Mohammed bin Zayed Al-Nahyan, Crown Prince of Abu Dhabi and Deputy Supreme Commander of the Armed Forces, the security of the Arab Gulf region is a key element in stability and world peace. The Arab Gulf region is important politically, economically, and strategically. According to him, the GCC countries have succeeded in collaborating

72. N. Guar, "SDG Number 16: The Pursuit of Peace, Justice and Good Governance," Corporate Citizenship, 2015, available at: http://corporate-citizenship.com/2015/09/22/sdg-number-16-the-pursuit-of-peace-justice-and-good-governance/.
73. Federal Foreign Office, Gulf Cooperation Council, http://www.auswaertiges-amt.de/EN/Aussenpolitik/RegionaleSchwerpunkte/NaherMittlererOsten/GCC/Uebersicht_node.html.

in maintaining security and stability in the region and facing the challenges and regional conflicts.[74]

Figure 12 shows the state of peace in each of the GCC countries. Saudi Arabia and Bahrain are considered to be at a medium level state of peace while the UAE, Oman, Kuwait and Qatar enjoy a high level of peace.[75]

Figure 12: The state of peace in the GCC countries



Source: IEP 2015.

SDG No. 17: Strengthen the Means of Implementation and Revitalize the Global Partnership for Sustainable Development

In order for the GCC countries to achieve their SDGs, they have to agree on several factors such as leadership, transparency, accountability, and collaboration. Collaboration is important to develop new technologies and find new methods.[76] The 17th SDG is a crucial goal that is linked directly to all other SDGs and focuses on the importance of cooperation among different stakeholders. The key to achieving this goal successfully is to engage across the different financial, scientific, technological institutions.[77]

74. "Mohammed Bin Zayed: Gulf Security is an Essential Part of Global Stability," *Alroeya*, 2015, available at: http://alroeya.ae/2015/05/15/244400/ الخليج-من/.
75. Institute for Economics and Peace, "Global Economic Index 2015," http://economicsandpeace.org/wp-content/uploads/2015/06/Global-Peace-Index-Report-2015_0.pdf.
76. MESIA, "A Trillion Dollar Opportunity."
77. ICSU, *Review of the Sustainable Development Goals.*

No single country can achieve any tangible progress in the area of climate change, water, energy, and health without partnering with all stakeholders at the international and regional levels, but especially on the local level. This is the basis of good governance in any field.

Partnerships facilitating technology transfer and owning environment-friendly, clean, low technology in various sectors will smooth the transition toward a green and low-carbon economy that attracts new investment and creates green jobs. In the long run, this would be a better option than asking for aid and related assistance.

In this context, the GCC states have begun to explore partnerships with countries of the global South, in particular in the Arab world and Asia. Much more needs to be done. Despite the similarities in the nature of environmental problems in the GCC and many parts of the Arab world and Asia, there has been little collaboration between these countries on environmental issues. Only in the last decade has there been an improvement, with countries like Japan taking the lead in bridging the gap between the problems and available support and solutions.

Japan is considered the third largest economy in the world. Yet, it lacks energy resources. Therefore, oil exporting countries like the GCC can trade their energy resources in return for technology transfers from Japan. At the same time, the GCC countries can gain more experience from Japan since it is a pioneer in the field of energy efficiency, such as energy-efficient buildings, district cooling, and smart grids. In collaboration with Japan's Mizuho Bank and Norinchukin Bank, in October 2015, the Kuwait-based Gulf Investment Corporation (GIC) launched the Gulf-Japan Food Fund. This partnership aimed to promote Japanese food and agribusiness in the GCC and support the food security plans in the region.[78] Ibrahim Al Qadi, CEO of GIC, stated that: "We are looking into the transfer of Japanese experience and know-how in the food sector, the use of technology for optimal utilization of funds and other critical resources such as water in support of food investments in GCC countries."[79] In fact, cooperation on environment and renewables is a win-win situation for both sides and will eventually strengthen economic and political relations. A joint technical committee on environment and renewable cooperation will help to push cooperation and explore ways for joint activities (missions, exhibitions, etc.) and projects.

78. A. Maierbrugger, "Japan-GCC: A Renewable Partnership," *Gulf News,* 2016, available at: http://gulfnews.com/gn-focus/country-guides/reports/japan/japan-gcc-a-renewable-partnership-1.1679385.
79. Ibid.

Conclusion

The GCC countries have seen their economies grow and diversify tremendously in the last decade. Yet, as these economies have grown, economic, social, and environmental challenges have grown as well. As a result, all SDGs represent important components for the GCC states to tackle their challenges and chart the way forward.

The GCC states have already enacted a number of policies and strategies that pursue the sustainable development path. These include numerous green initiatives and projects across the region. However, the path towards achieving SDGs is long, and a lot of effort and funds are needed to realize the goals.

Cooperation between the GCC member states is, in particular, crucial for the success of SDG efforts. South-south cooperation should also be pursued and could potentially represent a win-win idea for all countries involved.

Taking into consideration the latest 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. The agreement provides a real chance for the Arabian Gulf States to cooperate with all partners, locally, regionally, and globally, in the field of renewables technology transfer and deployment as well as to tap into the many opportunities for climate finance offered through the Paris pact on climate change. 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.

Policies to realize SDGs have to be well designed as success in one may lead to failure in another. For instance, an increase in agricultural land use to help end hunger can result in negative impacts on water resources due to overuse and/or pollution of water resources, which in turn could exacerbate food security concerns. Such reverse impacts must be considered as the GCC states chart the course ahead for the immediate future.

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