

King Fahd University of Petroleum & Minerals
SUSTAINABILITY REPORT 2024

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## President's Message

Dr. Muhammad M. Al-Saggaf

As we struggle with a planet in constant change and an ever-increasing population with over 8 billion people pushing global resources further every year, technological advances offer the potential to serve nations in a more equitable way, which KFUPM pushes at the boundaries in advanced research and science. However, is it collectively enough? Our dominance and desire for growth have impacted ecological systems, the atmosphere, the sea, and our way of life, which is now a critical factor in the changes we are experiencing on Earth.

As we strive to fulfill our ambitious Vision 2030 goals, Saudi Arabia, along with various other countries and governments worldwide, has adopted the United Nations (UN) 17 Sustainability Development Goals (SDGs) for a Sustainable Earth.

Universities are undoubtedly at the fore-front of this change through advances in research or teaching the next generation of future innovators. Our collective role at KFUPM is to create opportunities for the next generation to live in a more sustainable world. To secure a future for the next generation, we must create sustainable growth and development through knowledge sharing, community engagement, and understanding of our roles in this shared vision while keeping our nation's vision of the future.

However, the task of achieving these goals is incredible, and we will only solve global problems with global partners alongside us, if the whole world — governments, institutions, and industry all make an effort together as one.

At KFUPM, we are in a unique position to help society solve specific problems, and we must maximize our role to aid others in working towards the same plan. Working with partners outside the university is a natural routine that teachers, researchers, and KFUPM students are familiar with since this is part of our global mindset. We have nurtured the best talents to build sustainable energy resources and develop technologies that will impact our daily lives. In doing so, KFUPM is seen as a vital player impacting global issues.

I would like us all to consider the individual role that we can play in this crucial plan whether as faculty or as a student, we all must scrutinize our actions and the importance of building a new future, not only in terms of the direction KFUPM should take, but as global citizens in charge of designing a better world. In addition to KFUPM's ongoing sustainability initiatives which align with the United Nations' 17 SDGs, I welcome more input on how we can build this future together.

Sincerely,

Muhammad M. Al-Saggaf

## Previous Ranking Data





### 1st in Kingdom

RANKING PROGRESS

2023 **201-300**  2024 **81** 

SDG 6

RANK:
14

6 CLEAN WATER AND SANITATION

2024 OVERALL: 81

SDG 8

RANK:
11





SDG 17

RANK:
35

SDG 9

RANK:
53





**END POVERTY EVERYWHERE** 





256
CITATIONS



Fwc 1.49

## No Poverty

KFUPM is dedicated to taking active steps to end poverty regionally and globally. Through our actions, we aim to have a campus free of poverty while we continually pull our weight to achieve a society with no poverty.

All students at KFUPM are on full scholarship or assistantship, whether the undergraduate level or the post-graduate level, including all foreigners. The scholarship includes free tuition, free books, free luxurious accommodation in dorms, annual tickets to travel to and from home country to the university, medical care, and a generous stipend. About 18% of KFUPM's students are from developing or underdeveloped countries. These students are provided with a full scholarship and financial support. In some cases, student support extends beyond the students themselves- For example, students from modest backgrounds and poor families have the option of seeking interest-free loans from Student Affairs. This is generally used to sustain their relatives back home. In addition to this, the university set up a fund (open to donors) to support those students who are from families with limited income.

### **University Anti-Poverty Programs**

Al Fozan Academy was established in KFUPM to develop the capabilities of leaders and managers of non-profit institutions as a cooperation between King Fahd University of Petroleum & Minerals and the Al Fozan Social Foundation. In partnership with KFUPM, Alfozan Academy has initiated the RAED-a program to qualify youth leaders to manage community initiatives professionally, based on scientific methodologies, and international practices in volunteer management. This program trains our students to be leaders in nonprofit and volunteer organizations to achieve a community where poverty is practically nonexistent.

### **Community anti-Poverty Programs**

The university holds an annual scientific camp for orphans, in collaboration with the Benaa Charity Association for Orphans, the largest in the country. It teaches those students important skills that would give them an edge in admission to the university and encourages them to do so. Details about the 4th camp can be found in KFUPM NEWS.









END HUNGER, ACHIEVE FOOD SECURITY AND PROMOTE SUSTAINABLE AGRICULTURE



98



**869** 



1.77

## Zero Hunger

KFUPM believes that hunger is one of the greatest risks facing humanity. A large portion of the planet comprises of impoverished countries. Our measures against hunger can be summarized in the following paragraphs:

### Affordable Meals for Students & Staff

All affiliates under KFUPM, have access to affordable and healthy food. The food services department ensures that the food produced within the university is of the highest quality and at reasonable prices. Prices are lowered for students to ensure that they can have access to affordable and healthy meals. In addition, KFUPM dining halls offer a variety of choices for people following different diets (vegetarian, vegan etc.).





### **National Hunger**

Global Hunger Index (GHI) is a tool designed to measure and track hunger in different countries, at regional and global levels. GHI is calculated from data measuring undernourishment levels, child stunting, and child mortality data collected from each country. GHI values below 9.9 are low and desirable, while values above 50 are extremely alarming. A GHI score of 6.9 in 2024, Saudi Arabia ranked number 37 out of 127 countries. Despite this remarkable GHI score, KFUPM continues to stay committed to reducing the hunger index to zero in Saudi Arabia.

At the local level, the university participated in establishing the Volunteer Feeding Unit from Saudi Food Bank (ITAAM), which promotes social sustainability by creating an environment that motivates all members of the society to volunteer with the association, in all available programs and projects in the field of food, and to provide safe food to the beneficiaries. In addition, the university has a large volunteer event organized annually where all students are encouraged to participate. Recent themes include: Health and Environment sectors, Homes for the Elderly, Orphanages, and other fields. In partnership with Alber charity, KFUPM volunteers helped to distribute food for families in need. The 15th Volunteer Day





PROMOTING HEALTHY LIVES



**650** 



+14K



2.14

# Good Health & Well-being

KFUPM pays special attention to the physical and mental health of all its affiliates (students, faculty, staff, and all their family members). The university also realizes that part of its mission is to instill habits of good health and well-being in all its students and employees. KFUPM is continuously taking measures to boost the well-being of all humans as discussed below:

### Students in Health Professions

Since its establishment, KFUPM has been known for being the technology/engineering power-house of Saudi Arabia. However, as years passed by, merging the engineering and technology aspect with medicine-related subjects became a necessity. For this reason, in 2020, KFUPM started to offer Bioengineering Bachelor's Degrees where our knowledge and experience of 60 years in the field of Engineering has helped to enhance and serve the Life Sciences sector for the well-being of all humans.

#### Collaborations and Health Services

At KFUPM, the medical center delivers its services with high international quality standards. Students are treated free of charge. The medical center collaborates with different agencies locally and nationally to ensure that the population inside the campus has access to all necessary medical services. Furthermore, the medical center joined the referral program under the ministry of health (link). This program provides all the logistical and coordination needs for referring patients from one medical facility to another. It also provides an accurate archiving and statistics system that contains the patients' data transferred through the program between different health facilities all over the Kingdom.

The medical center also provides students with access to reproductive health-care services including information and education services through the Obstetrics and Gynecology Clinic.

Promoting good practices for well-being is a major key to achieving a healthy population. That is why annual events are held to promote good practices. For example, in October 2021 a Breast Cancer Awareness Campaign was held. This campaign aimed to raise public awareness of the disease and the importance of conducting early examinations for early detection. In addition to this, mental health is a vital part of well-being, for that reason a continuous awareness of mental health (link) is broadcasted throughout the campus- and students have free access to psychological consulting.

To ensure good health and well-being of the campus population, KFUPM has strict rules regarding smoking in public areas as second-hand smoke can tremendously affect the health of non-smokers. To reduce and eliminate the effects of second-hand smoking, KFUPM mandates smokers to smoke only in designated areas.

KFUPM is dedicated to fostering academic excellence and supporting student well-being through various initiatives, with the Irshad platform standing out as a key resource. Developed in-house, Irshad serves as a comprehensive support system that allows students to easily request assistance or be referred to relevant services by faculty and staff. The platform, which means "guidance" in Arabic, offers free, confidential, and accessible online support for academic, psychological, financial, medical, and social needs. With its seamless integration into students' academic schedules, Irshad ensures that all support services are conveniently available without conflicting with class times. By promoting holistic development and enhancing community well-being, Irshad is an invaluable tool in shaping the success and overall health of KFUPM students.





QUALITY EDUCATION AND LIFE LONG OPPORTUNITIES FOR ALL



88
PUBLICATIONS



506



1.22

# Quality Education

KFUPM has always been and continues to maintain its position as the prestigious university of the Kingdom of Saudi Arabia. It is recognized both nationally and internationally as a leading academic and research institution. In the last five years, the university concentrated on further improving the quality of its academic programs and offerings as a primary objective of its transformation. To align with the Saudi Vision 2030, KFUPM has ensured that all its programs are linked to the United Nations Sustainable Development Goals (SDGs) (link), demonstrating its commitment to sustainable development and global impact. As a result, it achieved several milestones that propelled it to international recognition. KFUPM jumped from number 180 to 101 in QS world university rankings in one year. To continue this progression, KFUPM is continuously taking measures to boost its quality of education, as discussed below.

### New Programs and New Ways of Teaching/Learning

Launching 38 new undergraduate concentrations: Undergraduate concentrations (CX) represent an innovative and critically important component of KFUPM's strategy to benefit the Kingdom. By adding a component of specialization to its undergraduate programs, concentrations prepare the students to hit the ground running (as soon as they graduate) and be able to integrate effectively, robustly, and quickly into the workforce of any organization. Through this program, students learn not only the basics of their discipline but also a certain area of specialization on which they focus to gain a concentration in that topic. For example, a student would graduate with a degree in Computer Science and a concentration in Cybersecurity. Students would have learned enough in Computer Science and satisfied all the requirements of that major. Additionally, students would also have specialized knowledge in the area of Cybersecurity, thus they can integrate much faster into cybersecurity work environments. This program has become very successful and has been very well

received by the industry, as evident from several sponsorships to the program. This program represents a hallmark of new innovative thinking with a characteristic that distinguishes KFUPM from the top ten global institutions. CX programs

### Lifelong Learning Measure

KFUPM Institute for Knowledge Exchange (KIKX) highlights public events such as seminars, general lectures, workshops, and conferences that take place at KFUPM either physically or virtually. KIKX also gives access to nontechnical articles and opinion pieces written by KFUPM's faculty on cutting-edge topics in Science and Technology. The goal of KIKX is to inform, inspire, and ultimately contribute to the transformation of society into a knowledge-driven one that can play the role it deserves in the ongoing fourth industrial revolution and beyond.





GENDER EQUALITY AND WOMEN EMPOWERMENT



18



76



1.84

## Gender Equality

One of the primary objectives of the transformation of KFUPM is the empowerment of women, and creating equal opportunities for them. Over the past two years at KFUPM has made substantial strides in equalizing opportunities for males and females, both as students and in the workplace.

### The Proportion of Graduates with Teaching Qualifications

In 2018, the university Board approved the admission of local female students to KFUPM's graduate programs to contribute to research, innovation, and leadership. In the 2019/2020 academic year, about 100 female students from among more than 600 applicants started their postgraduate studies in multiple disciplines at KFUPM. As the university is taking steps towards achieving several goals of the Kingdom of Saudi Arabia's Vision 2030, it opened admission to female students in the 2021/2022 academic year, to undertake Bachelor's Degree for the first time. The university raised the female student's admission to 600 students. This is equivalent to 40% of the total admitted students and is increasing.

H.R.H Prince Abdulaziz Bin Salman Al Saud, who is also the Chairman of the University's Board of Trustees, noted that the enrollment of female students in the university will enable them to benefit from a long-standing national academic institution, which enjoys prestigious international academic standards, and of distinguished rank among the universities in the world, especially in various fields of sciences and engineering.

Energy minister: Graduation enrollment for girls at KFUPM is a matter of pride - Saudi Gazette (link)

### The Proportion of Senior Female Academics

The university has been paying special attention to fast-tracking female employees into leadership positions, including critical functions such as public relations and students' affairs. The number of female employees in the university grew over the past three years. Over the past year, the university hired 90+ female employees. The university is aggressively targeting female faculty members (to teach both genders). As a result, the number of female faculty members is steadily growing.

### **Women's Progress Measures**

In all of its workspaces, KFUPM removed all restrictions on female employment and ostracizes any type of discrimination against women. Any form of reported discrimination would result in permanent dismissal and a transfer of the case to the appropriate official(s) or authorities. Women constantly encouraged by the institution to report any form of prejudice in order to create a welcoming and equal environment for everyone. Female workers are entitled to full-term maternity leave for a period of ten weeks.





SUSTAINABLE MANAGEMENT OF WATER AND SANITATION



# Clean Water & Sanitation

At KFUPM, we highly regard WATER as a vital resource. In this sense, the institution has developed an Environmental Sustainability Strategy which comprehends research, actions, processes and policies to address consumption, usage, care and community engagement to mitigate environmental risk in the framework of environmental compliance and due diligence. It is KFUPM's commitment to actively preserve this precious resource and to make it available for the benefit of future generations.

**Environmental Sustainability Strategy: Water** 

### Water consumption on campus

KFUPM provides inhabitants on campus with clean, safe water for drinking and household use. The water supply system provides service to four residential zones on campus, including faculty housing, student dorms, and academic buildings. Drinking fountains can be found in all buildings (except in labs and work-shops). The annual volume of water used is measured and the Water Consumption Report 2022 states that the annual water use per capita at KFUPM was 109 m3, considering a total campus population of 18,412 and a total volume of water used of 2,007,500 m3.

### Water Usage and Care

At KFUPM, the sewage system is connected to the public sewage system of Dharan city, which eventually reaches a wastewater treatment plant to be safely reused or disposed of. The process for the purifica-tion of water on campus is therefore regulated by this ongoing subscription with the company. On campus, KFUPM has put action steps into place that aim to prevent polluted water from entering the entire water system. For example, specific constructions of pipes, wells and pumps or provision of guidelines and awareness documents. Furthermore, KFUPM applies the <u>Saudi Building Code (SBC)</u> on all works of buildings and construction.

In particular, the institution is committed to applying the Saudi Green Building Code, which emphasizes in section 7 applying water-conscious equipment. Also, KFUPM applies the regulations of the Ministry of Environment, Water, and Agriculture (MEWA). KFUPM is taking various actions to increase water reuse through-out the university. These include, for example, utilization of Reverse Osmosis (RO) technology, collecting greywater on campus for potential recycling and reusing rejected water for irrigation or sustainable landscaping, especially water-conscious planting.

### Water in the Community

KFUPM's Institute for Knowledge Exchange (KIKX) periodically organizes workshops and seminars related to Water Security. workshops are accessible to the public and recordings can be found KIKX account. As part of KFUPM's awareness initiative. water institution has placed reminders in most campus washrooms, encouraging simple acts like turning off taps when not in use. Students and faculty are then encouraged to spread the word and raise awareness among family members as well as friends to reach out to a wider community. KFUPM is also involved in various water optimization projects with industry. These projects are part of the Environmental Impact Assessment (EIA) study, focusing on environmental feasibility of any proposed project and its potential affect on the environment, and natural resources such as water. Besides, KFUPM collaborates continuously with various agencies to address water security, fostering partnerships with government water utilities in Saudi Arabia and international institutes.





AFFORDABLE, RELIABLE, SUSTAINABLE AND MODERN **ENERGY FOR ALL** 



3709



+58K



1.97

# Affordable & Clean Energy

KFUPM acknowledges that conserving energy and utilizing modern technologies with minimal negative environmental effects are crucial for maintaining the planet. The university has taken several initiatives to include this goal in its academic and research activities, even though striking a balance between clean and affordable energy is a major challenge. The Environmental Sustainability Strategy: Energy (ESSE) responds to that challenge and comprehends actions, processes and policies to address energy consumption, energy efficiency, energy wastage, clean energy technologies, carbon and emission reduction as well as community engagement in the framework of environmental compliance and due diligence.

### Measures Towards Affordable and Clean Energy

KFUPM has a policy in place to demonstrate its commitment to the United Nations Sustainable Development Goals (SDGs). This policy applies to all operations and activities of the institution, including new buildings, renovations upgrades of existing buildings. Energy policy mandates all new buildings as well as all renovated and upgraded buildings be designed, constructed and equipped in a way that ensures the application of energy efficiency standards, improves energy conservation, reduces energy consumption and utilizes renewable energy sources. KFUPM's policy entails the Saudi Building Code (SBC) on all works of buildings and construction. In addition, KFUPM's President has instituted an active committee dedicated to driving power-saving initiatives and practices. ESSE was designed as a plan outlining goals, objectives and concrete actions that can help save money and protect the environment. Besides, KFUPM created a Climate Action Plan as an important tool for inspiring action. In this spirit, KFUPM's Center of Excellence in Energy Efficiency (CEEE ) conducts comprehensive energy audits, across campus and beyond, as well as it initiates

various projects aimed at sustainable energy practices. These audits provide valuable insights into our energy usage patterns and help identify areas for improvement.

### **Energy and The Community**

KFUPM's commitment toward sustainable and energy practices environmental awareness is reflected in its Energy Consumption Report which an overarching objective to achieve complete campus sustainability by 2060, committing to utilizing 100% renewable energy. The university's commitment also extends beyond its campus, reaching into the wider community with initiatives focusing on energy efficiency, outreach, and partnership endeavors. KFUPM's Interdisciplinary Research Center for Sustainable Energy (IRC-SES) conducts training Systems and awareness programs - for both university students external and institutions. KFUPM provides paid/free efficiency services energy organizations international/local governments aimed at improving energy efficiency and clean energy (energy efficiency assessments, workshops, research renewable energy options). KFUPM faculty helped in collecting data for the National Communication (NC) . These reports highlight steps taken to address article 12.1(b) of the United Nations Framework Convention on Climate Change (UNFCCC) Additionally, KFUPM supports student start-ups and ideas for renewable and low-carbon technology. Currently, IRC-SES is actively working on the establishment of a Renewable Energy Technical Incubator (RETI), It administers five programs, attracting researchers and entrepreneurs from undergraduate students at KFUPM and other universities in KSA to start-up enthusiasts.



SUSTAINABLE ECONOMIC GROWTH AND PRODUCTIVE EMPLOYMENT FOR ALL



324
PUBLICATIONS



+6K



2.27

# Decent Work & Economic Growth

Life at KFUPM is just that – life! Decent work in safe and stable conditions is a vital component of that life. It is defined by a work-life balance and an outstanding work environment that promotes personal growth. KFUPM recognizes that providing a healthy and safe work environment is a major factor in attracting and stabilizing the labor force acknowledgment created and Labor Relations & Workers' Rights Policy which embeds guid-ing concepts and policies founded upon the prin-ciples of the labor law code of the Kingdom of Saudi Arabia (Royal Decree No. M/51 dated 23 Shaban 1426 (27 September 2005).

### **Employment practice**

KFUPM articulates a clear system of ethical values, encompassing honesty, fairness, respect, and diversity, among others, through its Code of Conduct and the adherence to the principles of Saudi law. At KFUPM, all employees are paid at least the minimum wage as stated by the Ministry of Human Resources and Social Development. The latest regulation states that the minimum Wage for Saudis Registered in the Nitagat program is SAR 4,000. The university ensures that faculty and staff compensation as well as employment-related decisions are based on relevant qualifications, merit, performance, and other job-related factors (Code of Conduct IS FAIR, p. 9). Pay scales are regularly reviewed to uphold competitiveness.

### **Preventing discrimination**

According to <u>Saudi Labor Law</u> (Royal Decree (No. M/51) Chapter 2: Article 3): "Work is the right of every citizen. ... All citizens are equal in the right to work without discrimination based on gender, disability, age, or any other form of discrimination, ...". The principles of equality are also enshrined in the provisions of the university's <u>Code of Conduct</u> and observing them is obligatory

for all, internally and third-party workers. KFUPM thereby honors the obligations of Saudi Labor Law that contract, subcontract, and temporary workers are entitled to the same rights and provisions as other workers (Ch. 2, Art. 6). Furthermore, KFUPM has a policy commitment against forced labor, modern slavery, human trafficking, and child labor and university does not permit employment of minors on its campus, thus all university workers must be of at least 24 years of age. In the course of its policies against discrimina-tion, KFUPM supports the rights of women to work in the university sector and to an education. In addition to educational equality. KFUPM is committed to the social empower-ment and equal employment of women. KFUPM supports the Ministry of Resources and Social Development's Human program to increase female employment in the civil sector and its Women Leaders Program 2030. Accordingly, KFUPM applies the Saudi Civil Service salary scale and grades, which do not discriminate between genders. foster healthy work environment. KFUPM established mechanism to address employers' workers' grievances. In addition to internal resources, workers are encouraged to appeal to the Department of Human Resources and Social **Development** through the complaints portal and **Human Rights** Commission which also addresses workers' grievances

Human Resources and Social Development



RESILIENT INFRASTRUCTURE, SUSTAINABLE INDUSTRIALIZATION AND INNOVATION



# Industry, Innovation & Infrastructure

The 8 El Launched Startups (Aug 2020 - Aug 2021)











Kanaf (Ahmad almassrahy)

A startup that manufactures face shields to serve as COVID PPEs



Meem (Syed Shomaail Jafri)
A service startup for designing

And automating workflows











KFUPM has always been recognized for its innovation, leadership in patenting, creativity. In 2023, it ranked 4th worldwide among universities granted U.S. utility patents by the USPTO (link). Additionally, KFUPM was featured in Clarivate's Innovators to watch 2021. Most importantly, KFUPM believes that the primary aim of research and innovation is to improve the human condition. Therefore, it has recently restructured all its research programs to support this goal. A corollary of this aim is to promote the research market. In other words, research can be translated into products that benefit humanity just research-for-papers, rather primarily benefit the researchers' careers only. As a result of this new emphasis, several new startups were created.

KFUPM Entrepreneurship Institute (KFUPM EI), supports students and local creators. KFUPM EI provides mentoring and assistance to creators to establish their startups.

The university believes in revitalizing the role of entrepreneurship in the research system, by rejuvenating the spirit of entrepreneurship and developing enablers for inventors, who could be faculty, students, or even outsiders. This includes the DTV (Dhahran Techno-Valley) Startup Challenge, which attracted 166 ideas in the year 2020. The program has four phases:

- · Campaign.
- Boot camp to educate entrepreneurs on how to set up their startup companies.
- Incubation period with access to funding, mentoring, and services.
- Going to the market.

The objective is to increase the number of startups in DTV thereby, invariably enhancing the transition of the Kingdom's economy. Some examples of these startup ideas are in key areas such as IR4.0, chemicals, manufacturing, oil and gas, and FinTech. El Startups Success Stories



**REDUCE INEQUALITY** 



50 PUBLICATIONS



637
CITATIONS



1.92

## Reduced Inequalities

KFUPM believes in giving equal opportunity to all. Our admission process and recruitments of both faculty and administrative personnel are highly inclusive and transparent. This university does not differentiate between people regarding gender, race, religious beliefs, disabilities, or nationality. Moreover, KFUPM strives to reduce income disparity in all its activities.

KFUPM modified all its contracted workforce agreements to ensure that the new agreements specify the wages of the contractor personnel rather than leaving it to the contractor to determine these wages, thereby being at risk of underbidding which could invariably result in low wages to its workers. This spans all categories of work, down to janitorial and cleaning personnel. The contractor workers received this exceptionally well, as it also ensures higher retention and better productivity.

### **Measures Against Discrimination**

At KFUPM, admissions are based solely on academic merit, with multiple tracks available to ensure a fair process for all applicants. The Regular Track is determined by a weighted score, calculated as follows: 50% from the General Aptitude Test (Qudurat) score, 40% from the Achievement Test (Tahisili) score, and 10% from the high school GPA. Additionally, there are alternative admission tracks, including the SAT Track and the Olympiad Track, allowing students qualify through diverse academic achievements. Admission decisions are based on these objective criteria, ensuring that anyone who meets the academic standards has the opportunity to study at KFUPM. Terms of Admission

It is noteworthy that there is a committee han-dling scholarships given to students on low-in-come. One of the tasks of this committee is to track and verify the financial situation of the students in this category. Also, KFUPM has an HR talent acquisition team targeting the recruitment of female staff and faculty.

The university has a strong policy against any discrimination. Paragraph 7.3 page 9, of KFUPM code of conduct covers anti-harassment.

The same paragraph also states, "In order to sustain а non-hostile environment, proactive some include behaviors and attitudes treating all others with equal respect regardless of dignity gender, ethnicity, or any other individual differ-ences." Code of Conduct

The Counseling and Advising Unit at KFUPM is concerned with providing advice to students on social, psychologi-cal, and educational matters. It is an optional service available to whoever desires it, including staff and students from under-represented groups. Counseling and Advising Unit

In addition to this, the university provides accessible facilities for people with disabilities. Mentioned on page 20 of the organizational and procedural guide for people with disabilities are some of the amenities provided to enhance the work-ing conditions of individuals living with disabilities. These are:

- Special tracks for the visually impaired
- Toilet aids for people with visual and movement disabilities
- Special access routes at the gates for people with mobility and visual disabilities
- Automatic doors
- Audio maps.

Furthermore, as mentioned on page 19, there are more services made available to people with disabilities. These include note-taking help and providing academic advisory services through coordination between students with disabilities and a faculty member cooperating with the special needs' unit.



MAKE CITIES SAFE, RESILIENT AND SUSTAINABLE



476





+5K



1.77

# Sustainable Cities & Communities

KFUPM's campus is situated in the Eastern Region of Saudi Arabia, one of the fastest growing regions in the Kingdom. Education, research, and collaboration with local communities at KFUPM can help form inclusive, sustainable, and smart cities that support rural-urban linkages that are socially, environmentally, and economically beneficial and respectful of basic human rights.

### KFUPM Measures Toward Sustainable Cities

The extent to which KFUPM believes in sustainable cities and communities is so much that it offers a variety of practices and academic programs which make cities inclusive, safe, resilient, and sustainable.

KFUPM supports sustainable commuting by offering on-campus buses for students, a cycling club, and by offering essential services close to housing like a restaurant, Mall, and sports facilities.

Sustainable commuting is promoted regularly on campus for students and staff by email and by organizing events such as <u>competitions</u>.

KFUPM allows its employees to work remotely by following the <u>regulations of HRSD</u>. Refer to article 9, page 9.

Employees and Faculty Affairs Department provides affordable housing on campus with different options. Employees need to pay approximately only 4000 USD per year for housing, and that includes furniture, maintenance and utilities. The average renting cost for a nearby house outside the campus would cost up to 20000 USD per year. Refer to Page 135 in the faculty handbook (146 in the pdf).

Shared furnished students' housing costs only 600 SAR/Semester (US\$ 160/Semester) and for free during summer, which makes it affordable for the students. Renting in nearby areas would cost up to 1500 SAR per month for a shared room. Refer to Page 35 in the student handbook (36 in the pdf).

Master of Engineering in Smart and Sustainable Cities and Master of Engineering in Intelligent Transportation are offered to communities around the world to face many complex challenges and secure their future energy, mobility, health, and environmental needs sustainably.

The new department in Smart Cities offers an undergraduate program on this topic and serves as City Planning 2.0, including sustainable transportation, 15-minute cities, the use of renewable energy, advanced green spaces and vertical farms, safe and affordable housing, and building resilient societies.

### **KFUPM Campus and Public Access**

Apart from research and education there are multiple common facilities at KFUPM's campus such as: the Medical center, Library, Sports center. The public and local communities have free access to the university campus, library, academic buildings, and KFUPM Campus guided tours in architecture and history. The campus green spaces are also used by the public, with outdoor seating. KFUPM employees can issue a permit for visitors and once obtained, members of the public can visit the common facilities (excluding sensitive buildings like the R&D Labs)

### Public Engagement: Events in University Campus

Explore (Summer Research Creativity Challenge) for outstanding high school students.

KFUPM continues organizing <u>career day</u> as has been done for over thirty years as a leading idea and major achievement associated with this university that is always keen to adopt initiatives and ideas, and experiences that contribute to serving students and help them to start their career.

The Sustainability Club at KFUPM promotes sustainable practices in line with Vision 2030. This year, it organized seminars, joined the Saudi Green Initiative, and engaged students through campus activities and social media. With 30 members, the club is expanding to include competitions and a recycling project.



SUSTAINABLE CONSUMPTION AND PRODUCTION PATTERNS



528

PUBLICATIONS



+9K

CITATIONS



2.58

Responsible Consumption & Production

KFUPM is committed to responsible consumption and production among the KFUPM community and the local community.

### **Operational Measures**

Safety procedures on waste disposal inside the campus and chemical hazardous waste handling and disposal (link) are followed to handle municipal waste and dangerous substances and chemicals by EHS (Environment Health & Safety) department to ensure proper disposal of chemical waste. In addition, we have a medical waste management policy at medical center. Medical Waste Management Policy refers to Hazardous Medical Waste, including infectious, chemical, sharps, and pharmaceutical waste. For waste generated from radioactive sources, KFUPM operates a Radioactive Waste room (link).

The recycling initiative at the KFUPM campus is expected to maintain a cost-effective and efficient waste management program that focuses on reducing, reusing, and recycling of waste. Evidence is listing action points, including "Plastic Waste Reduction" under point 2. (Environment, Health and Safety - Recycling & Waste Management).

The university adopted the Code to assist its members with the university's goals of conducting its business and affairs per applicable laws, rules and regulations, and maintaining the highest standards of ethical conduct, fair dealing, good faith, and honesty. KFUPM code of conduct.

### The Proportion of Recycled Waste

The EHS department implemented color-coded recycling stations across the university to collect and segregate the waste. Also, this department encourages the KFUPM community to adopt the usage of reusable water bottles and make use of free-of-charge drinking water tap outlets at various locations on the campus and the use of biodegradable paper carry bags plastic bags. More practices instead of related to paper reduction are urged among the community (Kindly visit EHSmanagement). recycling & waste Housing Office Services department monitors and measures the amount of generated, including agricultural

### **Publication of Sustainability Report**

KFUPM publishes a sustainability report every year. This report shows KFUPM activities and progress made fully aligned with the SDGs related to poverty, hunger, good health and well-being, quality education, gender equality, clean water and sanitation, affordable and clean energy, decent work, and economic growth, industry, innovation and infrastructure, reduced inequalities, sustainable cities and communities, responsible consumption and production, climate action, life below water, life on land, peace, justice and strong institutions and partnerships for the goals https://sustainability.kfupm.edu.sa.





COMBAT CLIMATE CHANGE AND ITS IMPACTS



1037



+17K



2.09

### Climate Action

As the population keeps increasing and more greenhouse gasses are emitted, KFUPM is pulling its weight through education and research to reduce the effects of climate change nationally and globally.

### Environmental Education and Research Measures

The university has dedicated centers to find solutions that help in reducing the impact of climate change and global warming. Some of these centers conduct research in renewable energy & power systems and in hydrogen & energy storage. Also, a concentration program was developed and launched which focuses on climate change adaptation. Furthermore, a research project was initiated which focuses on converting carbon dioxide into hydrocarbon products. Realizing the importance of Carbon Seguestration (CCS), Capture and Abdulaziz City for Science and Technology (KACST) established a national Technical Innovation Center (TIC) on Carbon Capture and Seguestration (CCS) at KFUPM. Several projects were launched and completed at CCS, which aimed to reduce carbon emissions. Some of the achievements of this center are:

- 3 US patents in the area of CCS.
- Over 23 research papers in ISI-indexed scientific journals.
- 11 scientific research papers in reputable international conferences.

Furthermore, KFUPM Institute for Knowledge Exchange (KIKX) held public events such as seminars and general lectures on climate action. Some of the topics discussed are:

- A panel discussion on a<u>dvancing</u> technological breakthroughs through research.
- An event on the role of hydrogen in future clean energy landscape.

- A seminar about the imperative shift towards a decarbonized, circular economy within the polymer and plastic industry, employing the priniple of Sustainable Systems Engineering. Faced with the passing need to mitigate environmental impacts and reduce carbon footprints, the presentation delves into innovative approaches and technologies driving sustainability in polymer production, usage, and end-of-life management (link).
- A seminar about the overview of the Water and Electricity Regulatory Authori-ty, regulatory initiatives for renewable energy systems in KSA, regulatory framework and enablers of small-scale Solar PV systems in KSA, and overview of regulations for self-consumption renewable energy systems. Regulatory Framework for Renewable Energy Projects in Saudi Arabia
- A seminar about hydrogen production via water splitting on a large scale, waste recycling for hydrogen production, mate-rial synthesis for hydrogen production, and industrial progress on hydrogen production. Hydrogen Production for Fuel and Chemicals: Current Status and Challenges.





CONSERVE OCEANS, SEAS AND MARINE RESOURCES FOR SUSTAINABLE DEVELOPMENT



236
PUBLICATIONS



+3K



1.62

## Life Below Water

### Supporting aquatic ecosystems through education and action

The university is aware of the importance of education when it comes to SDGs. Therefore, various educational programs are continuously offered on campus and to the public. example One is the **MEWA** Fishing Methods Project, organized by Applied Research Center for Environment and Marine Studies (ARC-EMS). As part of this initiative, a workshop was held on December 25-26, 2023, to train fishermen in the Eastern Province on the use of Turtle Exclusion Devices (TEDs) in trawl nets. Focused on reducing the impact of fishing on marine wildlife, the highlighted the benefits of TEDs, their installation, and relevant regulations, promoting sustainable practices to protect sea turtles and other marine species. Additionally, KFUPM's CEMS has organized focused events on promoting conservation and sustainable use of seas notable and marine resources. One example is the "Awareness Program for Fisherman Communities at Jubail Harbors," Darin Fisheries where they addressed critical issues such as illegal fishing, overfishing, and pollution. Through this program, fishermen received education eco-friendly practices and the significance of habitat protection. The center also worked directly on research projects with industry and initiatives are targeted at protecting the fragile coastal and marine ecosystems and their biodiversity. For example, The Manifa Bay protection project with Saudi Aramco or Biodiversity Avoiding **Hotspots** from developmental activity. In addition, the center is working with different partners to develop technologies that enable the marine industry to minimize or prevent damage to aquatic ecosystems. The implementation of High-frequency radar (HFR) is an

example which has immense applications such as forecasting and hindcasting oil spills.

### Water-Sensitive Waste Disposal

The EHS department carries out regular environmental assessments, including water quality assessments, to ensure that activities undertaken on campus comply with national and international environmental quality standards. To prevent water pollution, especially from plastic waste, KFUPM started a recycling initiative at the campus which is expected to maintain a cost-effective and efficient waste management program that focuses on reducing, reusing, and recycling general waste, including plastic.

### Maintaining a Local Ecosystem

By using modern technology, **CEMS** moni-tor the health and changes in marine habi-tat, which will help policymakers, engi-neers, scientists. interested and other groups utilize marine resources or to make informed decisions that would help to protect and conserve the fragile and sensitive marine habitats. **Another** fascinat-ing project is the Mangrove Ecopark. It is the first mangrove eco-park in the Kingdom, protecting 64 km2 of habitats, including mangrove marine forests, salt marshes and seagrasses – all important nurseries for fish and shrimp. This eco-park will help foster knowledge and appreciation of this fragile ecosystem and consists of a visitor center, trails, and boardwalks, with various observation and education points. Α portion of the park is also designated for research activities.



PROTECT, RESTORE AND PROMOTE SUSTAINABLE USE OF TERRESTRIAL ECOSYSTEMS



121
PUBLICATIONS



+2K



2.59

## Life on Land

KFUPM is committed to preserving the ecosystem throughout the campus and the country by actions, education, and research.

### Supporting Land Ecosystem Through Education

KFUPM supports the land ecosystem through education. Several courses are available for undergraduate students and can be found in the <u>Undergraduate Bulletin</u>. The undergraduate courses aim to teach students about land use, distribution of urban and regional functions, infrastructure systems, municipal and regional models, population and community ecology, the interaction between species, functions of communities and ecosystems, environmental issues facing humanity, sustainability, biodiversity, evolution, food, soil, pest management, and renewable energy. Some courses are supported by a field trip to enrich knowledge through practical understanding.

The Department of Geosciences, with an active collaboration with the Chemistry Department offers Master of Science, and, Masters in Environmental Sciences Degrees. Graduate programs are fully sponsored by KFUPM and are offered to both local and international communities free of charge. These programs include some courses that educate students about resource sharing among communities, and fundamental concepts of terrestrial environments and human-induced pollution of air and land occurring on both regional and global scales (Graduate bulletin). These courses in environmental sciences are offered and can be taken by postgraduate students.

### Supporting Land Ecosystems Through Action

KFUPM is drawing a future with a dedicated center for environment and marine studies (CEMS) in how to keep catastrophic climate changes at bay while still powering our developing world. This center has a terrestrial section that concentrates on studying the biodiversity, ecology, and landforms in Saudi Arabia (terrestrial section CEMS). The Environment Health & Safety (EHS) Department carries out two major programs. These are:

- Building inspections and
- Walkthrough inspections.

Incase of any issues, the EHS department will communicate and coordinate with the concerned departments to address the matter (Environment, Health and Safety Department – Office of Environmental Monitoring).

### Land Sensitive Waste Disposal

KFUPM protects life on land through its policies on Waste Storage and Disposal Sewage and Plumbing. The EHS department at KFUPM has stretched its effort to find alternative ways to handle all solid generated campus wastes on responsible and environmentally friendly way. The recycling initiative at the KFUPM campus is expected to maintain a costeffective and efficient waste management program that focuses on reducing, reusing, and recycling of waste including waste source segregation, plastic waste reduction and paper reduction. One the initiatives carried out is the installation of special machines for water desalination and purification in KFUPM's stations-reclaiming water approximately 30% of salty water instead of disposing it. Hazardous materials are handled through the EHS department following safety practices that involve selecting compatible containers, identifying hazardous materials, and proper disposal of solid and liquid chemical wastes to protect (EHS-Chemical Waste land ecosystem Management).



PROMOTE PEACEFUL SOCIETIES
AND ACCESS TO JUSTICE FOR
ALL



36
PUBLICATIONS



**156** 



1.51

# Peace, Justice & Strong Institutions

KFUPM is committed to providing equal opportunities to all and ensuring that all students and employees are given their full rights according to law.

### **University Governance Measures**

The President is the Chief Academic and Executive Officer of the University, governed by a Board of Trustees. The current Chairman of the Board is His Royal Highness (H.R.H.) Prince Abdulaziz Salman, who also serves as Energy Minister.

KFUPM's students participate in social activities as volunteers. The aim here is to introduce students to social responsibilities through several activities targeting patients, the elderly, children, the environment, and general facilities. (The 15th Volun-teering Day)

All relevant internal and external stakeholders of the university are identified and engaged in decision-making and issue-resolution processes of the university. KFUPM lays a high emphasis on forging deeper contacts with the general public and key stakeholders, which not only boosts the general perception of the university but also enriches mutually beneficial relationships in the society. Wider participation decision-making helps stakeholders in adopt flexibility and avoid barriers through openended communication. KFUPM follows the Kingdom's laws which have strong regulations regarding corruption and bribery. In the campus community, safety and security measures quarantee a calm and secure environment where crime essentially non-existent. KFUPM has a zero-tolerance policy for any kind of bribery and corruption. Any violation of the Sharia Law is taken very seriously by KFUPM and could result in harsh consequences. KFUPM Code of conduct (Section 2.2) The American higher education system is used as the primary model for the academic freedom policy- with local adjustments as deemed necessary. The requirement that all technical topics be taught in the English

language is the most extensive of all policies.

It guarantees the relevance of technical material as well as the capability of graduates to communicate with managerial, technical, and scientific leadership of significant industries both on national and international level.

### **Working With Government**

Initiatives in research seek to address complicated problems, broaden knowledge for all individuals, and have a broader societal influence. Each year, its full-time researchers work with researchers from other research institutes and departments of the government to produce hundreds of technical research papers, reports, and results, for private and public clients. One of the most important features of our work is interdisciplinary research at centres such as: Advanced Materials, Communication Systems & Sensing, Construction and Building Materials, Finance & Digital Economy, Hydrogen & Energy Storage, Intelligent Secure Systems, Membranes and Water Security, Refining & Advanced Chemicals, Renewable Energy and Power Systems, Smart Mobility and Logistics, and Artificial Intelligence.





## STRENGTHEN AND REVITALIZE THE GLOBAL PARTNERSHIP FOR SUSTAINABLE DEVELOPMENT

# Partnerships for the Goals

KFUPM has collaborated with several organizations including regional NGOs and Government to identify problems and find solutions for diverse SDG-related topics. Two outstanding examples are firstly, the signing of three agreements with the Ministry of Labor and Social Development in the areas of volunteering and supporting the non-profit sector, promoting volunteering as a systematic and sustainable according to sustainability goals. Secondly, the Al Fozan Academy, a cooperation between KFUPM and Al Fozan Social Foundation Program, seeks to train a generation of leaders who can efficiently manage third sector institutions in order to perform their reauired role in the Furthermore, **KFUPM** community. continuously participates in cross-sectoral dialogues about the SDGs. KIKX (KFUPM Knowledge Institute for Exchange) holds regular seminars, workshops, and forums where specialists from around the world are brought together to discuss emerging topics in the field of sciences that can help humanity. Recently, the university took part in the MENA Climate Week and inaugurated the first ever training course on Carbon Economy in collaboration with the University of Oxford and KAPSARC. This workshop forms a pivotal part of Middle East Green Initiative. Also, KFUPM initiated its first research consortium Future), providing a platform (Sustainable together collaborators from brings academia, industry, and government to tackle some of humanity's most pressing challenges. It adopts a futuristic, materialsbased approach to overcome obstacles to sustainability by creating and upscaling a wide range of innovative solutions essential to achieving a sustainable future. To assist the country and the world in gathering and measuring SDG-related data,

KFUPM faculty helped in collecting data for the National Communication (NC). These reports highlight steps taken to address article 12.1(b) of the <u>United Nations Framework Convention on Climate Change (UNFCCC)</u>. One of KFUPM's main tasks as a university is to educate students about the importance of volunteer work and how to be an active member of society. For this reason, the university runs an annual volunteer day. It serves the university's mission to help the community through programs focusing on areas such as health, environment or rehabilitation.

### Education for the SDGs

KFUPM is committed to providing a meaningful education around sustainability across the university. It has introduced a set Undergraduate Concentration (CX) programs. These programs align with global trends, the job market and the Kingdom's Vision 2030, which relates widely to various SDGs. also Accordingly, **KFUPM** introduced Master's degree programs (MX) with some of them being dedicated courses that address sustainability, for example energy or Master of Smart and Sustainable Furthermore, **KFUPM** involved in the Debate, that aims provoke Saudi program to mainly students and Youth, young professionals, to rethink energy and sustainability. It is just one amongst many programs the university plans introduce, programs that align with different SDGs to equip the new generation with the knowledge needed to achieve and maintain these goals.



# A YOUNG GENERATION MAKING A DIFFERENCE THROUGH SUSTAINABILITY

# Sustainability Club

#### Vision

The club envisions a campus where sustainable practices are seamlessly integrated into daily life, with initiatives that can serve as a model for other institutions. The long-term goal is to establish a lasting legacy of environmental stewardship and innovation in sustainability.

### Mission

To promote sustainability and environmental awareness within the KFUPM community and beyond. It aims to educate, inspire, and engage people in sustainable practices. Through various events, competitions, and collaborations, the club strives to create a tangible impact on campus and contribute to global sustainability efforts.

### Sustainability Club initiatives

- **Education and Awareness**: Events, workshops, and competitions to promote sustainability.
- **Collaboration**: Partnerships with university and external organizations for impactful projects.
- **Campus Integration**: Projects to embed sustainable practices in campus life.
- **Community Engagement**: Outreach to make sustainability a shared goal.
- **Advocacy**: Media and public relations to champion environmental stewardship.

These initiatives drive our mission to foster a sustainable culture on campus and beyond.

### Sustainability Club this academic year

This academic year, the Sustainability Club has over 70 students actively participating across five specialized committees

- Public Relations
- Competitions
- Sustainable Projects
- Media
- Performance & Documentation

These committees work together to enhance the club's mission of integrating sustainability into the university culture.

### Our plan for the upcoming academic year

For the upcoming academic year, the Sustainability Club has outlined several initiatives focused on engaging the university community and promoting sustainable practices:

- 1. Green Speaker Series
- 2. Sustainability in Action Workshops
- 3. Sustainable Minds Competition
- 4. Sustainable Design Challenge
- 5. Tree Planting Initiative
- 6. Sustainability Exhibition
- 7. Waste Management Initiative

These projects aim to embed sustainability into daily campus life and inspire students across various disciplines to contribute to environmental solutions.





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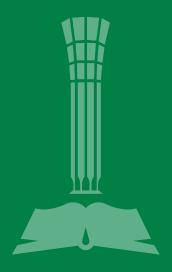
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