

The Role of Saudi Environmental Laws and Regulations in Protecting the Environment, and achieving the goals of sustainability: The Case of Hail City

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Abstract

Saudi Arabia, a nation rich in natural resources and economic potential, faces significant environmental challenges. Rapid industrialization, urbanization, and a heavy reliance on oil have led to issues such as air and water pollution, desertification, and biodiversity loss. To address these challenges, Saudi Arabia has developed a framework of environmental laws and regulations designed to protect its unique ecosystems and promote sustainable development. In order to apply these rules and regulations locally, many cities and municipalities in Saudi Arabia have adopted initiatives and strategies aiming at applying the national rules. Among these cities is the city of Hail. Hail, a city in north-central Saudi Arabia, is distinguished by its rich history and unique ecological environment. However, the region faces significant environmental challenges, including water scarcity, desertification, and pollution, largely driven by rapid urbanization and agricultural practices. To address these issues, Hail is implementing various initiatives aimed at promoting environmental protection and sustainable development. This essay explores the current state of environmental efforts in Saudi Arabia in general and Hail in particular, supported by practical examples, along with reliable sources for further reading.

Keywords: Law, Regulations, Environment, Sustainable, Development, Saudi, Hail.

Introduction

Focusing on environmental protection has become a priority for the Kingdom of Saudi Arabia. This is due to the environmental challenges facing Saudi Arabia due to growing industrial activities as well as urban development.

With the adoption of Vision 2030, there has been a strong focus on adopting environmental laws that help create a sustainable future aimed at preserving water resources, biodiversity, and issuing laws related to waste recycling and environmental management.

Saudi Arabia faces major environmental challenges such as water scarcity, air pollution, and others. Facing such challenges requires the adoption of comprehensive laws that combine regulating human activities, encouraging community participation, and using innovative technologies and advanced environmental management methods.

The city of Hail is considered one of the cities rich in its agricultural heritage and its distinguished historical heritage, and one of the most important cities in Saudi Arabia. Despite this importance, the city of Hail faces some environmental challenges that require the adoption of serious environmental policies.

Here in this research, the focus will be on local efforts in the city of Hail that aim to implement public policies in Saudi Arabia at the local level. In this regard, many initiatives and strategies have been adopted that aim to implement Saudi environmental policies and laws. These initiatives include projects to promote sustainable agriculture, preserve historical and cultural heritage, etc.

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This research aims to explore the role of environmental rules and policies in Saudi Arabia in protecting the environment and achieving sustainability goals.

The research question is how the environmental policies and initiatives in Saudi Arabia in general and in the city of Hail in particular could help protect the environment and achieve sustainability goals. And what are the main projects and strategies that have been adopted in this regard?

Regarding the research methodology, the researchers have used primary sources such as law texts and regulations. Also, secondary sources such as academic journals, professional reports, and reliable websites will be used as well.

Legal Framework for Environmental Protection in Saudi Arabia

Saudi Arabia's environmental laws are primarily governed by the Saudi Environmental Law (Royal Decree No. M/165 of 2020) and the General Authority for Meteorology and Environmental Protection (GAMEP), which oversees environmental governance. These laws aim to establish standards for environmental protection, regulate pollutants, and promote sustainable practices.

Then the Environmental Regulations, Royal Decree No. M/165 dated 19 Dhu al-Qi'dah 1441 AH (corresponding to July 10, 2020) were issued and entered into force on January 13, 2021, replacing the 2011 Regulations.

Under this system, the Presidency of Meteorology and Environment became responsible for supervising environmental affairs and granting environmental permits in Saudi Arabia.

In 2019, four centers were established to replace the Presidency of Meteorology and Environment.

These bodies are: the National Center for Environmental Compliance, the National Center for Vegetation Cover and Combating Desertification, the National Center for Wildlife, and the National Center for Meteorology. In 2016, the Ministry of Agriculture was restructured to include environmental affairs as well, and it is now called the Ministry of Environment, Water and Agriculture.

Under the Environmental regulations, many activities that cause pollution of water, air and land are prohibited, and projects that have an impact on the environment are obligated to comply with the environmental standards and principles in force in Saudi Arabia. At the international level, Saudi Arabia has ratified many international agreements related to environmental affairs, such as the International Convention for the Prevention of Pollution of the Sea by Oil of 1954 (Oilpol 1954), the International Convention on Civil Liability for Oil Pollution Damage of 1969 (CLC 1969) and the Paris Agreement of the United Nations Framework Convention on Climate Change.

A significant feature of these regulations is the emphasis on Environmental Impact Assessments (EIAs), which require developers to evaluate the potential environmental effects of their projects before approval. For instant, in 2017, the Kingdom implemented the **National Industrial Strategy**, which includes environmental considerations in industrial planning. This initiative underscores the importance of conducting EIAs for new projects, ensuring that economic growth does not compromise environmental integrity (Saudi Ministry of Industry and Mineral Resources, 2020).

In terms of protection of biodiversity, Saudi environmental law also focuses on the preservation of biodiversity. The Wildlife Protection Law of 2004 aims to conserve the Kingdom's unique flora and fauna, many of which are endemic and vulnerable. The law establishes protected areas and prohibits activities that threaten wildlife habitats. For instance, the establishment of the Saudi Green Initiative in 2021 illustrates a commitment to enhancing biodiversity and reducing carbon emissions. This initiative aims to plant billions of trees and rehabilitate degraded lands, which is supported by legal frameworks that protect these areas from urban development and exploitation (Saudi Green Initiative, 2021).

Regarding the Air and Water Quality Regulations, and sustainable development, Saudi Arabia has enacted regulations that set limits on emissions and discharges from industrial facilities. The Air Quality Control Regulation (2008) and the Water Quality Regulation (2008) mandate compliance with specific standards to protect public health and the environment. For this goal, the Saudi Vision 2030 plan emphasizes reducing air pollution and promoting renewable energy sources. The introduction of the National Renewable Energy Program aims to diversify energy sources, thereby reducing reliance on fossil fuels and mitigating air pollution (Saudi Vision 2030, 2016).

As public participation in protecting the environment has a significant role in shaping social awareness of environmental issues, Saudi environmental law encourages public participation in environmental decision-making processes. The incorporation of stakeholder feedback is essential for ensuring that the interests of local communities are considered, particularly in projects that may affect their environment. The **Environmental Impact Assessment (EIA) procedure** allows for public comments on proposed projects, fostering transparency and community involvement. This is crucial in maintaining a balance between development and environmental conservation (GAMEP, 2019).

Environmental Protection and Sustainable Development in Hail, Saudi Arabia

Hail, located in north-central Saudi Arabia, is characterized by its unique geographical features, including vast desert landscapes and a rich cultural heritage. As the region faces increasing pressures from urbanization, agricultural practices, and climate change, the importance of environmental protection and sustainable development becomes paramount. This essay explores how Hail is addressing these challenges through various initiatives, policies, and community engagement, highlighting practical examples and relevant resources.

Challenges Facing Hail

Hail's environment is threatened by several factors, including desertification, water scarcity, and pollution. Rapid population growth and urban expansion lead to increased demand for natural resources, which puts significant strain on the region's ecosystem. Moreover, traditional agricultural practices often rely on unsustainable water use, exacerbating the challenges of water scarcity.

Hail's environment is under pressure from multiple factors. With an arid climate characterized by low annual rainfall (approximately 100 mm), the region is particularly susceptible to water scarcity. The over-extraction of groundwater for agriculture and urban use has led to significant declines in water levels, with reports indicating that the water table is dropping by up to 1 meter per year in some areas.

Data from the 10th five-year plan reveal that overall consumption has decreased by 1.5 percent annually since the 8th plan. Notably, Al-Jawf Province experienced the most significant decline at 5 percent per year, followed by Hail at 3.2 percent and Najran region at 2.9 percent (Suhail et al, 2024).

Additionally, urbanization has resulted in increased waste generation. In 2024, Hail produced around **38,000 tons of municipal domestic waste**, (Hail Municipality, 2024). Such statistics underscore the urgent need for effective waste management strategies (Alriyadh News 2023).

Initiatives for Sustainable Development in Hail

To combat these challenges, Hail has initiated various projects focused on environmental protection and sustainable development. One notable example is the Green Saudi Initiative, launched in 2021, which aims to combat climate change and enhance the quality of life in Saudi Arabia. This initiative includes a commitment to planting billions of trees across the Kingdom, with specific projects implemented in Hail. The Hail municipality has launched a tree-planting campaign aimed at increasing green cover in urban areas, which not only enhances the local environment but also improves air quality and supports biodiversity. The project encourages community participation, highlighting the role of citizens in environmental stewardship (Hail Municipality, 2022).

As Water Management Practices is considered as one of the main goals of sustainable development, the region has adopted modern irrigation techniques to optimize water usage in agriculture. More than half a million trees are planted in the Hail region (Al-Ghobari, Hussein, 2007). The implementation of drip irrigation systems has been a game-changer for local farmers, allowing them to use water more efficiently and reduce wastage. The King Abdulaziz Center for World Culture has partnered with local farmers to promote sustainable agricultural practices, including water conservation methods. This collaboration focuses on educating farmers about efficient water use and crop selection, which is vital in a region where water resources are limited (King Abdulaziz Center's website, 2023).

Also, Hail has planned to adopt waste Management and Recycling systems. Hail's commitment to effective waste management and recycling plays a pivotal role in aligning with Saudi Arabia's Vision 2030, which aims to create a sustainable environment, promote economic diversification, and enhance the quality of life for its citizens (Saudi Vision 2030, 2016). As part of this national vision, the Kingdom has set ambitious targets for reducing waste, increasing recycling rates, and promoting sustainable practices across various sectors (Ministry of Environment, Water, and Agriculture, n.d.). Hail's municipality is actively contributing to these goals through its initiatives and programs.

The Hail Recycling Initiative serves as a fundamental component of the municipality's strategy to reduce the volume of waste sent to landfills (Arab News, 2021). By encouraging residents to separate their waste into recyclables and non-recyclables, the initiative not only promotes responsible waste disposal but also fosters a culture of sustainability within the community. This grassroots engagement is essential for achieving the national target of increasing the recycling rate to 60% by 2030, as outlined in Vision 2030 (Saudi Vision 2030, 2016).

Educational campaigns are another crucial aspect of Hail's waste management efforts. These campaigns aim to raise awareness among residents about the importance of recycling and the environmental impacts of waste (Saudi Gazette, 2021). By informing the community about the benefits of recycling—such as conserving natural resources, reducing pollution, and saving energy—Hail is empowering its citizens to take an active role in sustainability efforts. The municipality has organized workshops, seminars, and community events to engage residents and encourage participation in recycling programs (Al Arabiya, 2021).

The establishment of collection points for recyclable materials throughout Hail further enhances the accessibility of recycling services. These strategically located points make it easier for residents to dispose of their recyclables, thereby increasing overall participation in recycling initiatives (World Bank, 2020). This infrastructure not only helps to divert waste from landfills but also supports the circular economy by ensuring that valuable materials are reused and repurposed.

Hail's initiatives contribute to the economic diversification goal of Vision 2030 by creating opportunities for local businesses involved in recycling and waste management (SIRC, n.d.). As the demand for recycling services grows, local entrepreneurs have the chance to establish businesses that focus on processing recyclable materials. This not only stimulates the local economy but also creates jobs, fostering a sense of community involvement and investment in sustainable practices.

A significant player in the broader Saudi waste management system is the SIRC Company (Saudi Investment Recycling Company), a subsidiary of the Public Investment Fund (PIF). SIRC plays a crucial role in advancing the Kingdom's waste management strategies by promoting sustainable practices and facilitating the establishment of a circular economy (SIRC, n.d.). The company focuses on developing waste management solutions that are innovative and environmentally friendly, aligning with the goals of Vision 2030 (Al-Moosa, Hessah, 2015).

The collaboration between Hail's municipality and SIRC is vital for enhancing local waste management initiatives. SIRC provides expertise, resources, and support to municipalities like Hail, helping to implement best practices in waste management and recycling (SIRC, n.d.). Through this partnership, Hail can leverage SIRC's knowledge and experience to improve its recycling programs and waste treatment facilities.

Moreover, SIRC is involved in various projects aimed at building recycling infrastructure across the Kingdom. This includes the development of recycling plants and facilities that can process a wide range of materials, from plastics to organic waste (World Bank, 2020). By investing in such infrastructure, SIRC is not only helping municipalities like Hail improve their waste management systems but also contributing to the national goal of reducing waste and increasing recycling rates.

Hail's partnership with SIRC also aligns with the Kingdom's commitment to innovative technologies in waste management. SIRC is exploring the use of advanced technologies, such as smart waste management systems that utilize data analytics and IoT (Internet of Things) to optimize waste collection and processing (SIRC, n.d.). Implementing these technologies in Hail could significantly enhance the efficiency of waste management operations, reduce costs, and minimize the environmental impact of waste disposal.

In conclusion, Hail's proactive approach to waste management and recycling is integral to achieving the objectives of Saudi Arabia's Vision 2030. Through initiatives like the Hail Recycling Initiative, educational campaigns, and strategic partnerships with organizations like SIRC, the municipality is making substantial contributions to the national goals of sustainability and economic diversification. By fostering community engagement, supporting local businesses, and embracing innovative practices, Hail is setting a precedent for effective waste management in the Kingdom, demonstrating that sustainable practices are essential for a prosperous and environmentally responsible future. The Hail Recycling Initiative encourages residents to separate their waste into recyclables and non-recyclables. Educational campaigns are conducted to raise awareness about the importance of recycling, and collection points for recyclable materials have been established throughout the city. This initiative not only reduces environmental impact but also creates opportunities for local businesses involved in recycling (Alqahtani, et al, 2022).

Promoting Renewable Energy

As part of its sustainable development goals, Hail is exploring the potential for renewable energy sources, particularly solar energy. Given the region's high solar exposure, harnessing solar power presents a viable solution for reducing reliance on fossil fuels. Here we can mention the initiative, and projects adopted by Hail to promote renewable energy. The Hail Solar Project aims to install solar panels in public buildings and schools, demonstrating the feasibility and benefits of renewable energy. This project not only contributes to energy efficiency but also serves as an educational tool for students and the community about the importance of sustainable energy practices (Saudi Ministry of Energy Report, 2023).

Community Engagement and Education

Community involvement is crucial for the success of environmental protection initiatives in Hail. The region has focused on educating its residents about sustainable practices and the importance of protecting the environment. The **Hail Environmental Awareness Campaign**, organized by local NGOs and schools, includes workshops, seminars, and activities designed to engage citizens in environmental issues. These programs emphasize the importance of conservation and encourage participation in local sustainability initiatives (Hail Environmental Society).

Conclusion

This research shows that although the environmental challenges in Saudi Arabia, this country has adopted many laws and regulations to protect the elements of the environment. These initiatives and projects have covered different areas such as water, air, and land. Moreover, the Saudi vision of 2030 has adopted many projects and initiatives that have played a significant role in achieving the goals of sustainable development.

In order to achieve a comprehensive application of these rules and plans, such rules and initiatives should be applied locally. From this aspect, many cities in Saudi Arabia including Hail have been adopted their local projects in order to enforce the national projects and regulations.

Hail's proactive approach toward sustainability is exemplified in its comprehensive strategies aimed at promoting recycling, reducing waste, and conserving natural resources. The municipality's various initiatives, such as the Hail Recycling Initiative, empower residents to take part in sustainable practices, significantly enhancing community involvement. Educational campaigns serve to raise awareness about environmental issues, instilling a sense of responsibility among citizens regarding waste management and conservation efforts.

Furthermore, the partnerships formed between local government, educational institutions, and private sectors are instrumental in driving innovation and research related to sustainable practices. These collaborations foster knowledge exchange and resource sharing, enabling Hail to adopt best practices and cutting-edge technologies in its environmental initiatives .

Additionally, Hail's efforts align closely with Saudi Arabia's Vision 2030, which emphasizes sustainability as a core objective. By setting ambitious recycling targets and investing in renewable energy projects, Hail is contributing to the Kingdom's broader goals of reducing environmental impact and promoting economic diversification .

As Hail continues to implement and expand its sustainability initiatives, it not only enhances the quality of life for its residents but also positions itself as a leader in environmental stewardship within the region, inspiring others to undertake similar commitments to sustainable development. Finally, researchers will present a set of recommendations and proposals for environmental protection in Saudi Arabia in general, as well as a set of proposals and procedures specific to the city of Hail:

General recommendations for environmental protection in the Kingdom of Saudi Arabia

Enhancing renewable energy methods: This comes through expanding investment activities in the field of solar energy and wind energy in order to create a multi-source economy and not just oil, with a focus on benefiting from the natural landscapes, especially the desert in Saudi Arabia, and investing in high solar potential.

Water conservation and protection programs: This is done by adopting initiatives and projects to recycle water in agricultural and industrial activities, as well as using desalination technologies at the lowest environmental cost.

Waste management and recycling projects: This will be the result of adopting advanced systems in the fields of waste collection and recycling at the level of Saudi Arabia. Encouraging families to sort waste and helping them to have convenient access to recycling facilities.

Protecting natural habitats: By establishing more protected areas that aim to protect endangered species and varieties.

Public awareness: This is done by conducting awareness campaigns on sustainable environmental practices, such as reducing the use of plastic materials, protecting water resources, and urging the public to use environmentally friendly products. Here, we do not ignore the role of schools and companies in promoting environmental awareness and responsibility.

Additionally, we can also provide some recommendations and suggestions for protecting the environment to achieve the sustainable development goals in Hail:

Protecting archaeological sites in the city and encouraging ecotourism: Given that the city of Hail has unique historical and archaeological sites, establishing protected areas around these places will help enhance their protection from pollution and human activities.

In addition to archaeological sites, the city of Hail has a distinct cultural heritage and natural beauty. Therefore, encouraging environmentally friendly tourism activities will enhance the protection of this heritage.

Adopt green initiatives and encourage the cultivation of local plants: This comes through adopting initiatives to enhance green spaces and relying on drought-resistant plants. Encouraging the cultivation of local drought-resistant plants in both public and private areas to enhance green spaces without using large amounts of water.

By adopting these measures and initiatives, Saudi Arabia will be able to promote a more sustainable and environmentally responsible culture, and supporting the goals of Saudi Arabia's Vision 2030 will ensure a healthier environment for future generations.

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