



Reimagining Urban Futures

Enhancing Soil Stewardship in Mega Real Estate Developments

Afkar Collective

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Executive Summary

The global issue of soil degradation poses a significant threat to ecosystems and societies worldwide. Various studies highlight the detrimental impact of soil erosion on food production and economic stability, emphasizing the urgent need for action. Countries like China, the United States, Australia, and the European Union among others have taken pioneering steps to integrate soil health into their national security frameworks, setting examples for sustainable land management practices.

In contrast, the Gulf Cooperation Council (GCC) countries face a lack of explicit policies addressing soil preservation as a critical component of national security resilience. Despite initiatives like Saudi Arabia's Vision 2030 and the Saudi Green Initiative, the GCC's strategic vision on soil health remains in an emerging stage, posing risks to future stability and prosperity in a region vulnerable to environmental challenges.

As the global conversation on soil conservation gains traction, the GCC have the opportunity to pivot towards strategic integration by acknowledging soil preservation as a cornerstone of sustainable development and security. By learning from global exemplars and enhancing their policies to focus on soil health, GCC countries can navigate the challenges posed by soil degradation more effectively, ensuring a secure and sustainable future for their populations.

Mega Real Estate Developments, while symbols of progress, can also have adverse effects on soil health through extensive land transformation. Developers play a crucial role in mitigating these impacts by implementing soil stewardship practices, such as green infrastructure and responsible land use planning, to preserve soil integrity, support biodiversity, and contribute to environmental sustainability.

Introduction

The silent crisis of soil degradation reverberates across the global landscape, casting a shadow over the delicate balance of ecosystems and human societies. New research, such as of Deeb et al. (2024), offers a numerical testament to the far-reaching implications of soil erosion. Across regions like the Middle East, these stark figures intertwine with approaches quantifying both the economic toll and the ruthless impact on global food production—laying bare the urgent imperative for resolute action.

The stark realities of soil degradation are quantified through a lens of alarming percentages and staggering monetary costs. Global estimates, as ascertained by the European Union Joint Research Centre's analysis, reveal that soil erosion by water exacts a harrowing toll to the tune of \$8 billion annually, a stark indicator of the economic burden borne by nations grappling with dwindling soil health and despoiled arable lands.

Complementing these figures are the indelible impacts on food production, with a stark reduction of 33.7 million tons—an unmistakable signal of the disruption wrought upon global food security by soil erosion and degradation. This quantitative portrait of food production loss paints a vivid backdrop against which the urgency of soil preservation as a tenet of national security strategy emerges with resounding clarity.

Leading the Charge: Nations Pioneering Soil-Security Integration

Amidst the pressing need for urgent action on soil degradation, key international players such as China, the United States, Australia, and the European Union have emerged as leaders in crafting innovative policy frameworks that intertwine soil health with national and economic security. These visionary initiatives, enshrined in laws and policies, outline a strategic roadmap where soil preservation serves as a crucial linchpin for ensuring long-term stability and resilience:

China has set a pioneering path with the "Grain for Green" program, integrating soil conservation into national security policy. This initiative provides a blueprint for sustainable land management, safeguarding food resources from the detrimental effects of soil degradation.

The **United States**, through initiatives like the Farm Bill, the Conservation Stewardship Program (CSP), and the Environmental Quality Incentives Program (EQIP), has established a robust foundation where soil health plays a central role in economic security and securing sustenance for future generations.

Canada's Soil Health Strategy (NSHS), a collaborative effort between the Soil Conservation Council of Canada (SCCC) and the Compost Council of Canada, focuses on enhancing soil health practices for sustainable agriculture.

Brazil's Living Soils initiative, promoted by the Inter-American Institute for Cooperation on Agriculture (IICA), aims to improve Brazilian soil health, promote good land management practices, and incentivize agricultural systems to accumulate more carbon in soils, thereby enhancing sustainable food production.

Australia demonstrates an integrated approach to soil preservation through its National Soil Strategy and associated research frameworks, highlighting soil health as a focal point of national security strategy and ecological resilience.

The European Union, supported by the Common Agricultural Policy (CAP) and the EU Green Deal, showcases a holistic commitment to soil conservation and erosion control, aligning agricultural practices with national security imperatives through sustainable land management. The European Soil Partnership also plays a significant role in this endeavor.

Ethiopia's Green Legacy Initiative, reinforced by sustainable land management policies, showcases the country's determination to combat soil degradation and ensure food sovereignty through environmentally sustainable practices.

In **Africa**, the Great Green Wall Initiative addresses soil degradation and desertification, emphasizing the importance of sustainable land management practices for ecological resilience.

These nations' proactive efforts underscore the critical importance of integrating soil health into national security agendas, serving as exemplars in the global fight against soil degradation and its far-reaching consequences.

The GCC's Struggle for Integration

In a world witnessing a paradigm shift towards a holistic approach to national security that encompasses environmental preservation, the Gulf Cooperation Council (GCC) countries find themselves at a critical juncture. While global leaders spearhead innovative policies that weave soil preservation into the fabric of national resilience, the GCC's strategic vision remains notably muted on this front, a glaring omission in their quest for sustainable security and stability.

Initiatives like Saudi Arabia's Vision 2030 and the Saudi Green Initiative, while laudable for their environmental sustainability objectives, still have a big space for articulating a clear commitment to recognizing soil preservation as an essential element of national security resilience.

The absence of explicit policies and legislative measures embedding soil preservation within the GCC's security dialogues casts a shadow over the region's preparedness in facing the multifaceted threats posed by degraded soil. In a region vulnerable to issues of water scarcity, desertification, and agricultural sustainability, the failure to articulate a strategic vision that integrates soil health with national security poses significant risks to forthcoming generations' well-being and prosperity.

Impact of Mega Real Estate Development: A Soil Perspective

The transformation of vast tracts of land for these ambitious projects often comes with a hidden cost, as soil health is subjected to intense pressures and disruptions that can have far-reaching consequences on the environment and long-term sustainability. The sprawling urban footprints of Mega Real Estate Developments entail massive excavation, land clearing, and soil compaction, oftentimes leading to irreversible degradation of the very soil that anchors these urban marvels. Soil erosion, loss of biodiversity, compaction, and contamination are common afflictions that accompany large-scale development, diminishing the soil's capacity to support life, retain water, and maintain crucial ecosystem functions.

As custodians of the land, developers hold a unique responsibility to safeguard soil health, implementing strategies that prioritize sustainable land management, biodiversity conservation, and soil restoration to ensure the longevity and resilience of these urban ecosystems.

By incorporating soil stewardship practices into the blueprint of Mega Real Estate Developments, developers can mitigate the adverse impacts of urban expansion on soil health and foster a symbiotic relationship between urban infrastructure and the natural environment. Soil conservation measures such as green infrastructure, permeable surfaces, urban green spaces, and responsible land use planning not only enhance the ecological integrity of these developments but also contribute to community well-being, climate resilience, sustainable urban growth, and national security itself.

As icons of modernity and progress, Mega Real Estate Developments have a unique opportunity to lead by example in championing sustainable practices that prioritize soil health. From green building technologies to rainwater harvesting systems and green roofs, these projects can set new standards for environmental stewardship, demonstrating how responsible development can coexist harmoniously with nature and ensure a legacy of environmental sustainability for generations to come.

Pivoting Towards Strategic Integration

As the global dialogue surrounding soil conservation gains momentum and countries increasingly recognize the intertwined relationships between soil health, economic stability, and food security, the imperative for the GCC to pivot towards strategic integration is undeniable. By drawing inspiration from global exemplars and enhancing their policy frameworks with a sharper focus on soil preservation, the GCC countries can

forge a path towards environmental sustainability and strengthen their security against the looming threats of soil degradation.

The time is ripe for a recalibration of the GCC's environmental strategies, charting a course that acknowledges soil preservation as a critical pillar of sustainable development and national resilience. As global counterparts set the stage with proactive measures, the GCC stands on the precipice of a unique opportunity—to convert challenges into milestones of strategic foresight and pave the way towards a more secure, sustainable future for the region's inhabitants.



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