



## Op-Ed: World Soil Day 2021 – Halt Soil Salinization, Boost Soil Productivity

*To mark the United Nations (UN) World Soil Day, **Mr. Mohamed Hassona, Horticulturist at the Qur'anic Botanic Garden (QBG), a member of Qatar Foundation (QF), explains why healthy soil is the foundation of sustainable agriculture, food security, and ultimately a healthy planet***

World Soil Day goes back to the year 2002, when it initially started off as a recommendation by the International Union of Soil Sciences. In 2013, it was unanimously endorsed by the United Nations (UN) Food and Agriculture Organization (FAO) and designated by the UN General Assembly as an official international day on December 5, 2014.

Aimed at increasing awareness of the importance of keeping ecosystems healthy and encouraging societies to improve soil health, the theme of this year's World Soil Day was 'Halt Soil Salinization, Boost Soil Productivity'.

There is a pressing need to address global soil health, particularly as, according to the UN, soil salinization takes away up to 1.5mln hectares of farmland per year from production. Given rising global populations - with FAO projections that the global population will exceed nine billion by 2050 - and their accompanying pressures on food supplies and other resources, it is imperative that policymakers begin to pay closer attention to these issues.

Soil is a non-renewable resource. Its loss and degradation are not recoverable within a single human lifespan. When soil is used for crop production purposes and the organic matter and nutrient contents are not restored, soil fertility declines, and delicate ecosystem balances are affected. Soil is the basis for food, feed, fuel, and fiber production. Soil degradation, therefore, threatens the ability to feed the world's population, increases carbon emissions, and serves as a warning sign to forthcoming mass migration. A change in farming practices is crucial.

In the Middle East, a region characterized as highly susceptible to degradation and desertification, the need to address and implement changes in farming soil practices is even more pressing. Improving soil health is the foundation of sustainable agriculture and a crucial element in eliminating food insecurity.

One of the biggest challenges to sustainable soil management is soil erosion, which is the displacement of the upper most fertile layer of soil. Among the main causes of soil erosion are deforestation, overgrazing, the use of agrochemicals and construction, and recreational activities. All of which are common occurrences in the Arab region. To address these issues, the UN Economic and Social Commission for Western Asia has suggested a series of actions,



including: the adoption of integrated soil, crop and water management techniques and investing in climate smart agricultural practices.

An additional challenge in the region is soil salinity, the concentration of salts in soil. If the level of salt in the soil water is too high, water may flow from the plant roots back into the soil, causing dehydration of the plant and yield decline. According to the [Arab Horizon 2030 Report: Prospects for Enhancing Food Security in the Arab Region](#), salinity alone is estimated to have caused \$1 billion in lost crop yields across the region. An effective method of allaying its effects is the use of nuclear techniques to support crop production, such as the use of a stable nitrogen isotope to optimize water and fertilizer use.

Plant diversity is a key component of healthy soils. It maintains the natural water cycles that enables soil, plant, and water systems to recover from environmental stresses by improving the entry and storage of water and resistance to erosion. According to the International Union for Conservation of Nature (IUCN), soil biodiversity, which is the variety of organisms that live in the soil, is a major determinant of the fertility and productivity of land. This can be boosted by the efficient use of soil water and nutrients, erosion control and maintaining ground cover by planting more trees. Planting more trees also addresses the issues of desertification and land degradation. In addition, it enhances food security.

In line with Qatar National Vision 2030 and the UN's Global Strategy for Plant Conservation, Qur'anic Botanic Garden (QBG) – a member of Qatar Foundation – supports local and global healthy soil efforts, and ecosystem preservation. It achieves this through environmental awareness campaigns and educational programs on food security, botany, and planting, as well as on-the-ground restoration and conservation projects through the rehabilitation of endemic plants and planting wild trees in their natural habitats, which reduce carbon emissions and limit desertification.

Global reforestation efforts and tree planting also contribute to healthy stable soils. Our annual Ghars tree-planting campaign aims to plant 2,022 trees in the leadup to the FIFA World Cup Qatar 2022™. As part of the initiative, QBG recently planted its 2000th tree with the US Embassy in Qatar, as part of the Year of Culture Qatar – USA 2021. It also signed an agreement with the Qatar Red Crescent Society (QRCS) to donate 2.5 million trees for the latter's volunteers to plant over a period of 10 years around Qatar, as part of a wider initiative by the Arab Red Crescent and Red Cross Organisation across the Arab world and in line with Qatar's pledge to plant 10 million trees by 2030 under the Middle East Green Initiative.

We work closely with the community and local and global stakeholders, such as the Ministry of Environment and Climate Change, QRCS, Royal Botanic Garden of Jordan, Botanic Gardens



Conservation International, and the IUCN to protect our environment. These efforts will continue, so that we ensure that our planet is green, abundant, safe, and habitable for the generations to come.

**ENDS**

### **Qur'anic Botanic Garden:**

The Qur'anic Botanic Garden, a member of Qatar Foundation for Education, Science and Community Development, the first of its kind in the world announced to exhibit all the plant species mentioned in the Holy Qur'an, and those in the Hadith and Sunnah (Sayings & traditions of the Prophet Muhammad PBUH). The Qur'anic Botanic Garden was inaugurated by Her Highness Sheikha Moza bint Nasser, Chairperson of Qatar Foundation, on 17 September 2008. To mark the event, she planted the Garden's very first tree, the Sidra (Ziziphus spina-christi Willd, Sidr), which is also the symbol of the Foundation. The Garden exhibits the botanical terms mentioned in the Holy Qur'an, explaining the significance of their mention in the Holy Qur'an, as well as the scientific explanations of composition, application and usefulness to man. It inspires appreciation of nature by encouraging respect and responsibility for our environment.

QBG is a member of Qatar Foundation. More information on QBG's upcoming events and activities can be found on its social media channels on Instagram: [Quranic\\_Botanic\\_Garden](#); Facebook: [Qur'anic Botanic Garden](#), and on Twitter at [@QuranicGarden](#).

### **Qatar Foundation – Unlocking Human Potential**

Qatar Foundation for Education, Science and Community Development (QF) is a non-profit organization that supports Qatar on its journey to becoming a diversified and sustainable economy. QF strives to serve the people of Qatar and beyond by providing specialized programs across its innovation-focused ecosystem of education, research and development, and community development.

QF was founded in 1995 by His Highness Sheikh Hamad bin Khalifa Al Thani, the Father Amir, and Her Highness Sheikha Moza bint Nasser, who shared the vision to provide Qatar with quality education. Today, QF's world-class education system offers lifelong learning opportunities to community members as young as six months through to doctoral level, enabling graduates to thrive in a global environment and contribute to the nation's development.

QF is also creating a multidisciplinary innovation hub in Qatar, where homegrown researchers are working to address local and global challenges. By promoting a culture of lifelong learning

حديقة القرآن النباتية  
QUR'ANIC BOTANIC GARDEN  
عضو في مؤسسة قطر  
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and fostering social engagement through programs that embody Qatari culture, QF is committed to empowering the local community and contributing to a better world for all.

For a complete list of QF's initiatives and projects, please visit: [www.qf.org.qa](http://www.qf.org.qa)

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