

# A GUIDE TO PLANTING WISELY

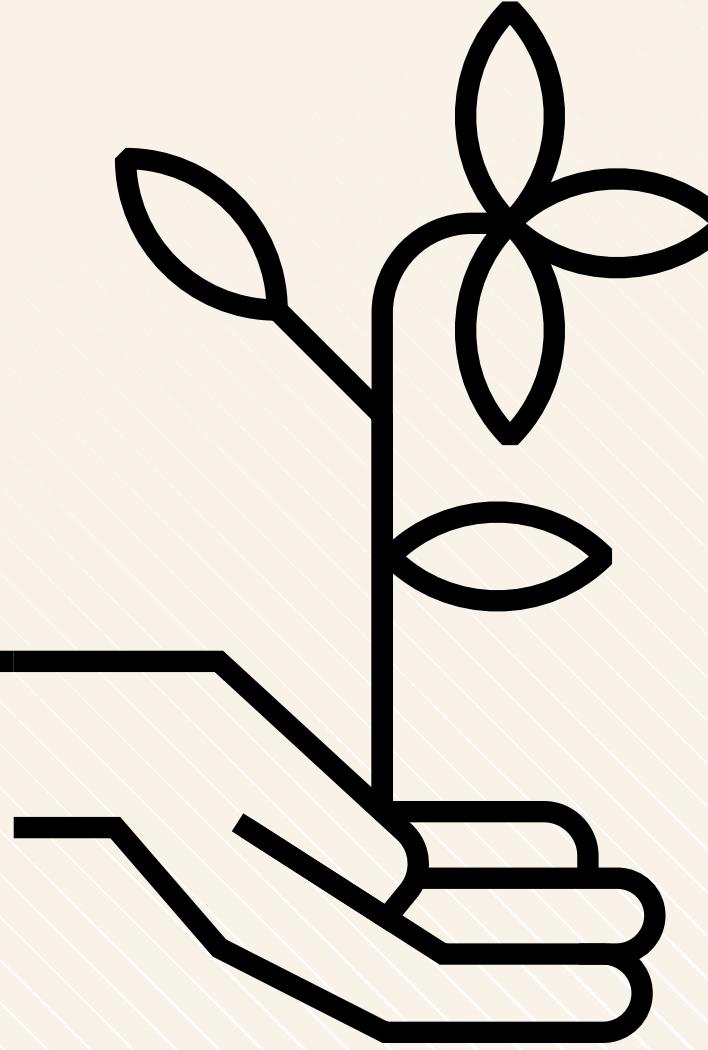
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## Introduction



Our dear readers, welcome to the fifth edition of our guides on sustainable living. In the previous guide, we focused on **Energy and Water Consumption**, emphasising the importance of conserving our resources and consciously incorporating sustainable decisions into our daily lives.

In this issue, we focus on **Planting Wisely** — this edition features composting, innovative irrigation methods, and insightful stories from passionate individuals dedicated to environmental sustainability.

As the UAE develops, adopting daily sustainable habits has become increasingly critical. Planting wisely is a powerful act of conservation that enriches our lives by safeguarding our biodiversity, preserving the beauty of native plants and the delicate balance of coastal ecosystems. In addition, by opting for locally-produced, high-quality food, we enhance our food security, strengthen community bonds and foster a profound connection with nature, inspiring us to cherish and protect our environment.

Let's dive in and learn how we can make planting wisely an integral part of our daily lives. Together, we can plan to action a brighter, greener future for us all and for future generations to come.

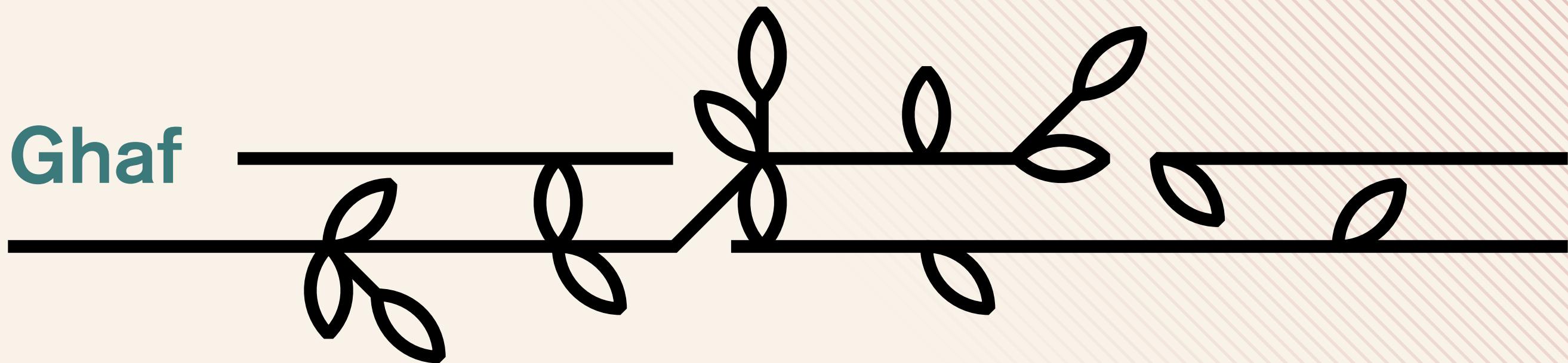
## About the Year of Sustainability

His Highness Sheikh Mohamed bin Zayed Al Nahyan, President of the United Arab Emirates, has declared 2024 as the 'Year of Sustainability'. This year-long initiative aims to promote the nation's deeply rooted value of sustainability, encouraging sustainable behaviour change and working towards a more sustainable and thriving UAE. Drawing on the UAE's heritage, the Year of Sustainability aims to inspire sustainable practices and collective action, bringing together everyone who calls the UAE home.

# Herbal Heritage: Discovering the Native Flora of the UAE

The UAE landscape is decorated with a variety of native plants like the Ghaf and the date palm. For centuries, these precious species have contributed greatly to our survival. Furthermore they have been the source of many gifts, such as food, shade and ancient herbal remedies.

## Ghaf



The Ghaf is the national tree of the UAE and a symbol of resilience and stability. With its deep roots, intertwined branches and vibrant green leaves, the Ghaf miraculously thrives in the hot climate of the desert. It is essential for animal and plant species' survival, supporting a connected ecosystem.<sup>[1]</sup>

## Al Samr Tree



Al Samr trees demonstrate high drought tolerance while providing shade and nourishment for wildlife. Known as the umbrella tree, they symbolise the UAE's heritage and our ancestors' traditions. These resilient species yield high-quality wood for cooking and nutritious feed for livestock. Their fragrant flowers produce nectar for exquisite honey. With nearly 54 million free seeds to be distributed by the Ministry of Climate Change and Environment, this initiative reflects our late founding father Sheikh Zayed's vision of agriculture as a cornerstone of our civilization<sup>[2]</sup>



## Date Palm



“ For us, the date palm is, and always has been, truly the tree of life. We have grown up with this remarkable species and its many products and find it impossible to imagine life without it. When we admire a date palm, we are looking at the foundations of our civilization and the sustaining force for countless generations.

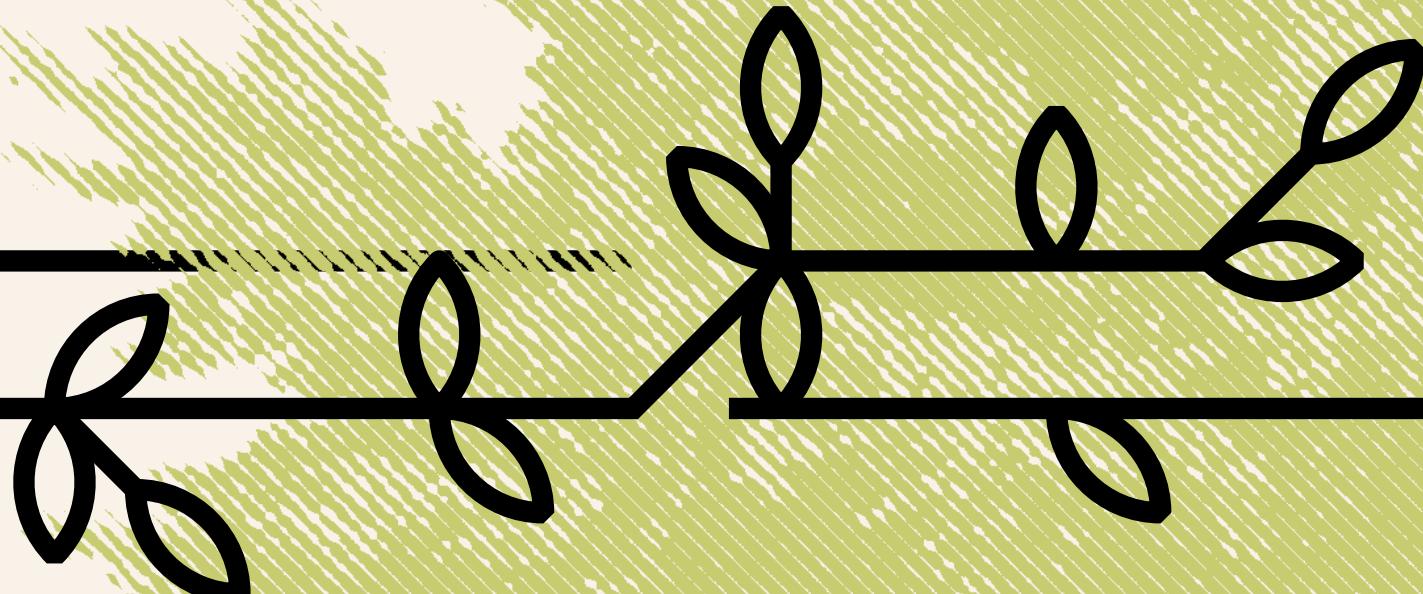
— Sheikh Zayed bin Sultan Al Nahyan,  
the late founding father of the UAE.<sup>[3]</sup>

For millennia, the palm tree has been an invaluable source of generosity and has provided essential nutrition, and sustenance to our ancestors in harsh environments. The palm fronds were ingeniously used to make baskets, camel saddles, mats, and even sturdy roofs that supported the traditional homes they constructed. The trunks of the palm trees were utilised in built structures, while the leaves were woven into handy household items, demonstrating the resourcefulness and craftsmanship of the people.

Furthermore, the date palm played a crucial role in the cultural and social fabric. It was central to many agricultural practices and festivals, symbolising prosperity and life, especially surrounding oasis ecosystems that our ancestors nourished over generations.<sup>[4]</sup>

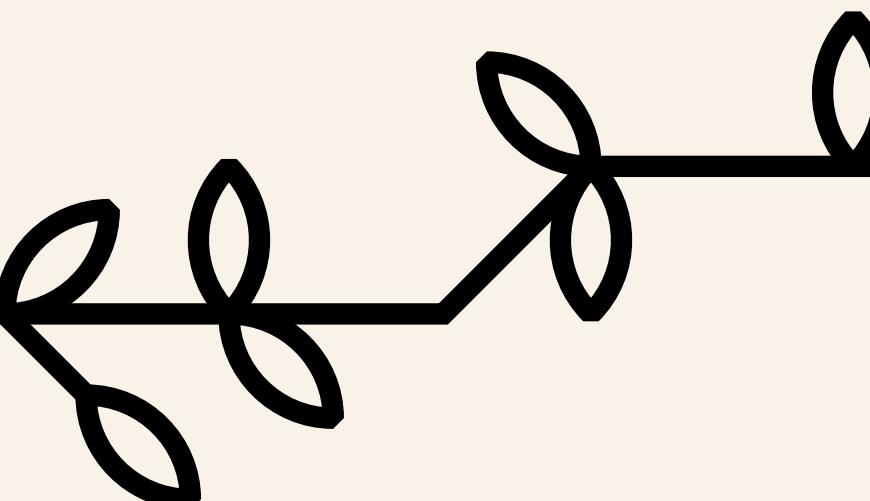


## Sidr



The UAE is home to several native plant species that have been used in traditional medicine for generations. Our ancestors relied on these plants for healing from various injuries, diseases, and infections. One great example is the *Ziziphus spina-christi* plant (jujube or Sidr), which is one of many edible plants that grow across the mountainous, coastal and desert landscapes of the UAE. A vital source of sustenance across generations, the jujube fruits are nutritious and rich in several vitamins, especially in vitamin C. The Sidr is loaded with cures for a plethora of diseases and medical conditions, such as liver complaints, insomnia, diabetes, obesity, fever, urinary troubles, digestive disorders, anaemia, loss of appetite.<sup>[5]</sup>

## Salt Resilient Shrubs



Halophytic plants are species that can tolerate high levels of salt naturally. Several halophytes thrive in the UAE, along the coast, on offshore islands and in arid inland areas. This includes Hopbush (*Dodonaea viscosa*) with its lush greenery and flowers, which is widely used in landscaping across the UAE, particularly in areas of high salinity.<sup>[6]</sup>





# How the UAE Plans to Action

# UAE Strategy for foreign/invasive plants



Invasive species can disrupt the natural balance of the environment and threaten native flora and fauna. To address this, the UAE launched initiatives through the Ministry of Climate Change and Environment (MOCCAE) to mitigate and eradicate these threats while safeguarding the natural beauty of the UAE's ecosystems.<sup>[7]</sup>

## Legal and Regulatory Framework

MOCCAE has implemented stringent laws and regulations, including Federal Law No. 24 of 1999, to control the import and spread of invasive species. Strict border control measures and quarantine protocols are enforced to prevent their introduction.<sup>[8]</sup>

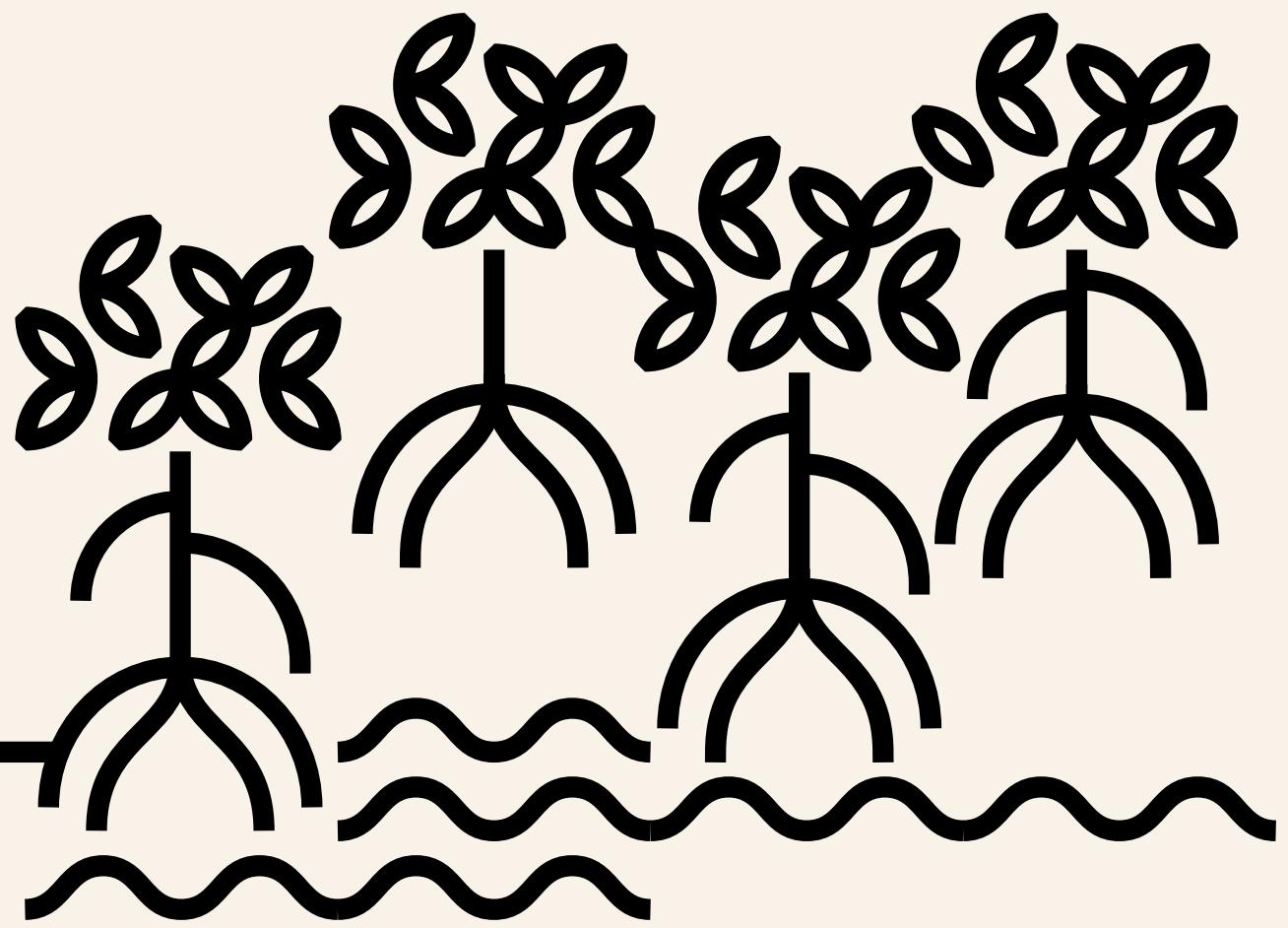
## Preventive Measures and Early Detection

Surveillance programs using advanced technologies like GIS are in place to monitor ecosystems and detect invasive species early. Collaboration with international bodies ensures adherence to global quarantine standards.<sup>[9]</sup>

## Management and Eradication

The UAE employs mechanical, chemical, and biological methods to control and eradicate invasive species. Integrated Pest Management (IPM) strategies are used to minimise environmental impact, and restoration projects help rehabilitate affected areas.<sup>[10]</sup>

# Planting 100 Million Mangroves



Mangrove ecosystems are vital to our planet's health, playing a crucial role in mitigating climate change by capturing significant amounts of carbon from the atmosphere. Remarkably, a large number of marine species live in the protective embrace of these lush ecosystems. Beyond their role as a nursery for marine life, mangroves act as the first line of defence against rising sea levels, shielding coastal areas from erosion and storm surges.

Recognizing their immense value, the UAE affirmed at COP26 that the UAE will plant 100 million mangroves by 2030. This ambitious initiative aims to enhance biodiversity, protect shorelines, and help combat climate change, securing a greener, healthier future for generations to come.<sup>[11]</sup>

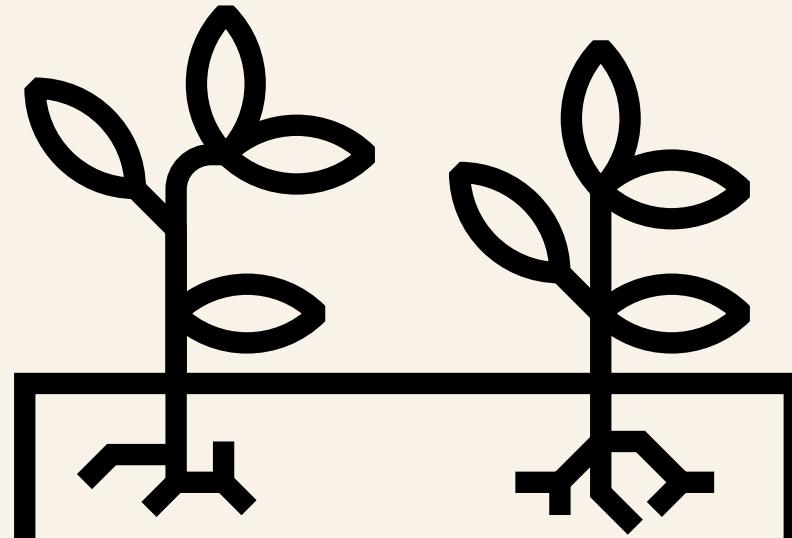


## Mleiha Wheat Farm Project



The Maliha Wheat Project is a groundbreaking initiative led by HH Sheikh Sultan bin Mohamed Al Qasimi, Ruler of Sharjah, to boost natural resources in the Sharjah region, ensuring sustainable and healthy agricultural production. Sheikh Sultan sowed the first seeds of wheat in 2022. This initiative aims to achieve food security, provide jobs, and strengthen the connection between the people and their land.<sup>[12]</sup>

## Dubai's Best Homegrown Produce Competition

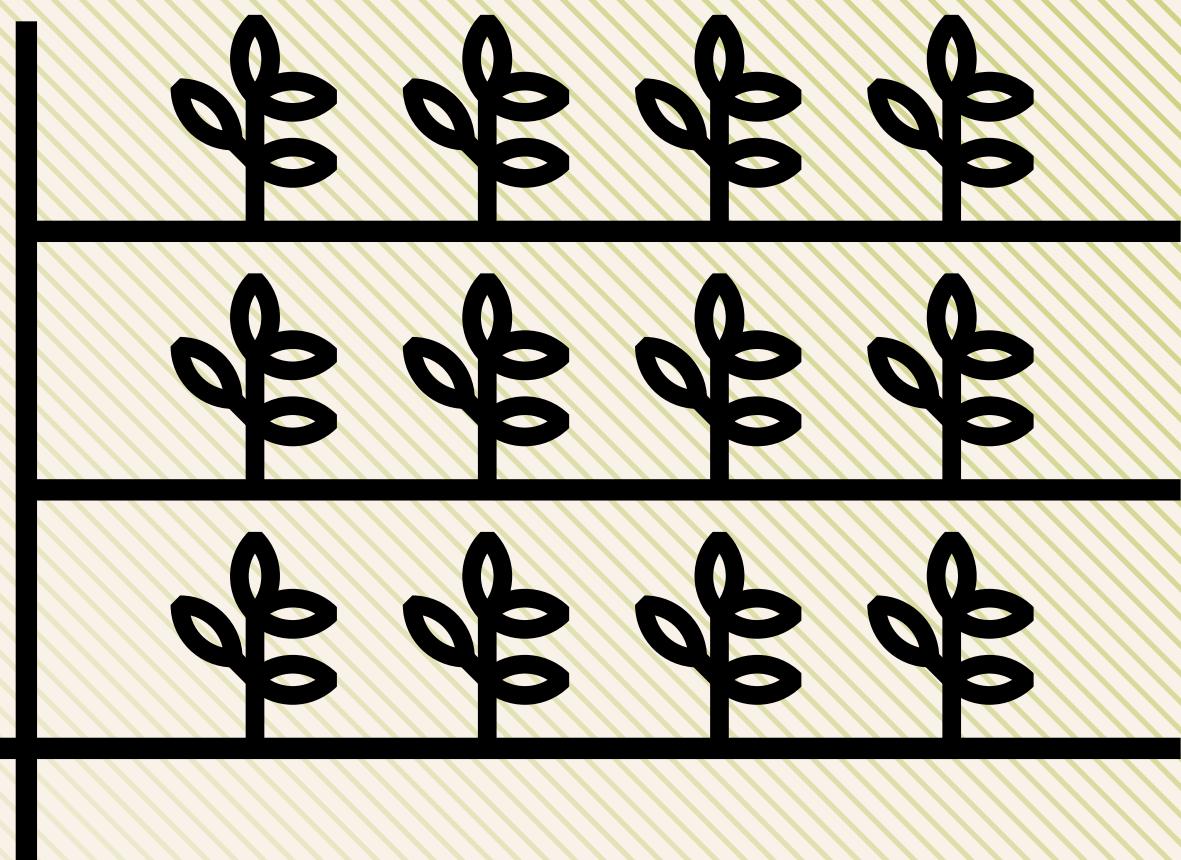


Aligning with the UAE's strategy to improve food security and boost small-scale sustainable practices, the "Dubai's Best Homegrown Produce Competition" is an initiative by Dubai Municipality aimed at promoting sustainable agriculture and enhancing local food production.

Three winners were announced in June 2024 for their homegrown produce submissions. Dr. Sultana Osman Yousef Suleiman in Jumeirah won first place for her advanced use of aeroponic systems, water treatment and recycling, and innovative methods like greenhouse cooling and aromatic plant distillation. Ms. Naeema Mohammed Al Amiri in Al Garhoud won second place for her garden that featured an aquaponic system with nutrient-rich water recycled as fertiliser, advanced irrigation systems, and an apiary for pollination and honey production. Lastly, Mr. Jamal Abdullah Almuheiri in Nad Al Sheba 2 won third place for utilising gravity-powered hydroponic systems, cultivation of Azolla for livestock feed, and energy-efficient practices for high-quality produce.<sup>[13]</sup>



# The Bustanica Vertical Farm



The Bustanica vertical farm project, spanning 30,658 square meters, stands as the largest vertical farm in the world, located in Dubai. This state-of-the-art facility integrates artificial intelligence and machine learning to produce large quantities of high-quality organic produce. Bustanica farm is capable of producing over 1,000,000 kilograms of leafy greens annually while using 95% less water than traditional agriculture. At any given time, the facility cultivates more than 1 million plants, yielding approximately 3,000 kilograms of produce per day.

The farm's advanced technology and specialised in-house team, comprising agronomy experts, engineers, horticulturists, and plant scientists, ensure a continuous production cycle of fresh, clean produce grown without pesticides, herbicides, or chemicals.

Vertical farming at Bustanica employs a controlled environment where temperature, humidity, lighting, water, and nutrients are precisely monitored to maximise growth and yield while virtually eliminating contamination risks. The closed-loop system circulates water through the plants, recovering and recycling evaporated water, thereby saving 250 million liters annually compared to traditional farming methods.<sup>[14]</sup>



# Planting Wisely At Home

# Marhaba Eman Almarri!



“Initially, I was under the false impression that our arid environment was not suitable for growing vegetables due to our desert climate. I was surprised when I tried growing tomatoes, a very sensitive crop. Then, I started growing herbs and various types of pumpkins. I soon realised that there were countless varieties of tomatoes with different shapes and colours that I could grow in the UAE”.

“Before starting this journey, I was very active on social media and loved hosting people. When some friends expressed interest in gardening, I organised a breakfast get-together and created a 10-slide PowerPoint presentation. We planted seeds and engaged in fun gardening activities, turning it into a small workshop. Inspired by the enthusiasm and support from my friends, who shared the experience online, I realised there was a great demand for gardening. This inspired me to hold my first official workshop, which sold out the same day!”

“I decided that every season I would teach at least 200 people. People started flocking from all over the UAE to learn about the fundamentals of planting at home. There were challenges related to insects and plant illnesses, so I decided to create an advanced gardeners workshop to tackle those issues. I then began tailoring the educational experience to suit children, teenagers, and even seniors”.

Discover more about Eman and follow her gardening journey on social media [@plantwith.amy](https://www.instagram.com/planwith.amy)



# Marhaba Saeed Alrumaithi!



Saeed's passion for farming began in his visits to Al Ain at a tender age. His early memories include planting melons, sweet potatoes and enjoying freshly picked limes with a sprinkle of salt. "It was not an easy journey. When I was a child, I had no prior knowledge about the seasons or fertilising plants. Visiting Al Ain, an agricultural epicentre, with its oases and natural freshwater sources, my father played an important role in teaching me the basics."

Saeed's love for the land began with sensory experiences with clay, sweet potatoes, and local limes. His farming journey started at home with pots, evolving into building a greenhouse using just a drill and a wood saw, guided by a YouTube video. Today, Saeed produces everything organically, namely a wide variety of fruits and vegetables. His philosophy is that nothing goes to waste, preserving leftovers from the harvest and even making eggplant jam.

"To anyone who plans on planting at home, I recommend starting in pots, you don't really need a large piece of land or a farm to start. I planted tomatoes, lemons, papayas, even mangoes, all in pots! This goes further to show that You CAN grow anywhere, you can grow at home, you can grow in balconies you can even plant inside your home with the help of LED lights".



# Marhaba Antonella Cocco!



Antonella grew up on the Mediterranean island of Sardinia, Italy, where natural resources were once abundant, and the locals lived in harmony with nature as self-sufficient farmers and fishermen. After completing degrees in geology and data science and moving to the UAE, Antonella became passionate about sustainable agriculture and seed production.

One of her most interesting projects involved calculating the carbon stock in the soil. Antonella advocates for more greenery and less concrete in cities, suggesting that we create green areas with various species like ornamental, horticultural, and fruit trees. She recommends starting small by building a greenhouse at home and using seedling trays made from natural materials like coconut fibres.





# Composting: Your 101 Manual to Start Your Journey

## Ready to start composting?

Here are some tips from Eman to get you going!

“ Compost is the most wonderful thing for plants and it is very easy to make! But first, we need to understand how it works. By making compost, we mimic nature — when it rains, it causes leaves to fall and eventually decompose, releasing nutrients in the process!

— Eman Al Marri ”

In order to do that we need to mix:



Kitchen scraps like fruit  
and vegetable peelings

+



Carbon-rich materials like wood  
chips, dry leaves, and cardboard



## Composting like a pro?

Here are some tips from Saeed

“ Leaves, wood chips, and vegetable peels can easily be collected to make compost at home- in a pile or inside of special compost boxes.

— Saeed Alrumaithi ”



You can add animal byproducts such as sheep, cow, and chicken manure as they are packed with nutrients for your plants when mixed in the compost.



Use Fish fertiliser to boost the growth of leafy vegetables.



The result is a dark and earthy-smelling superfood for our plants and vegetables!



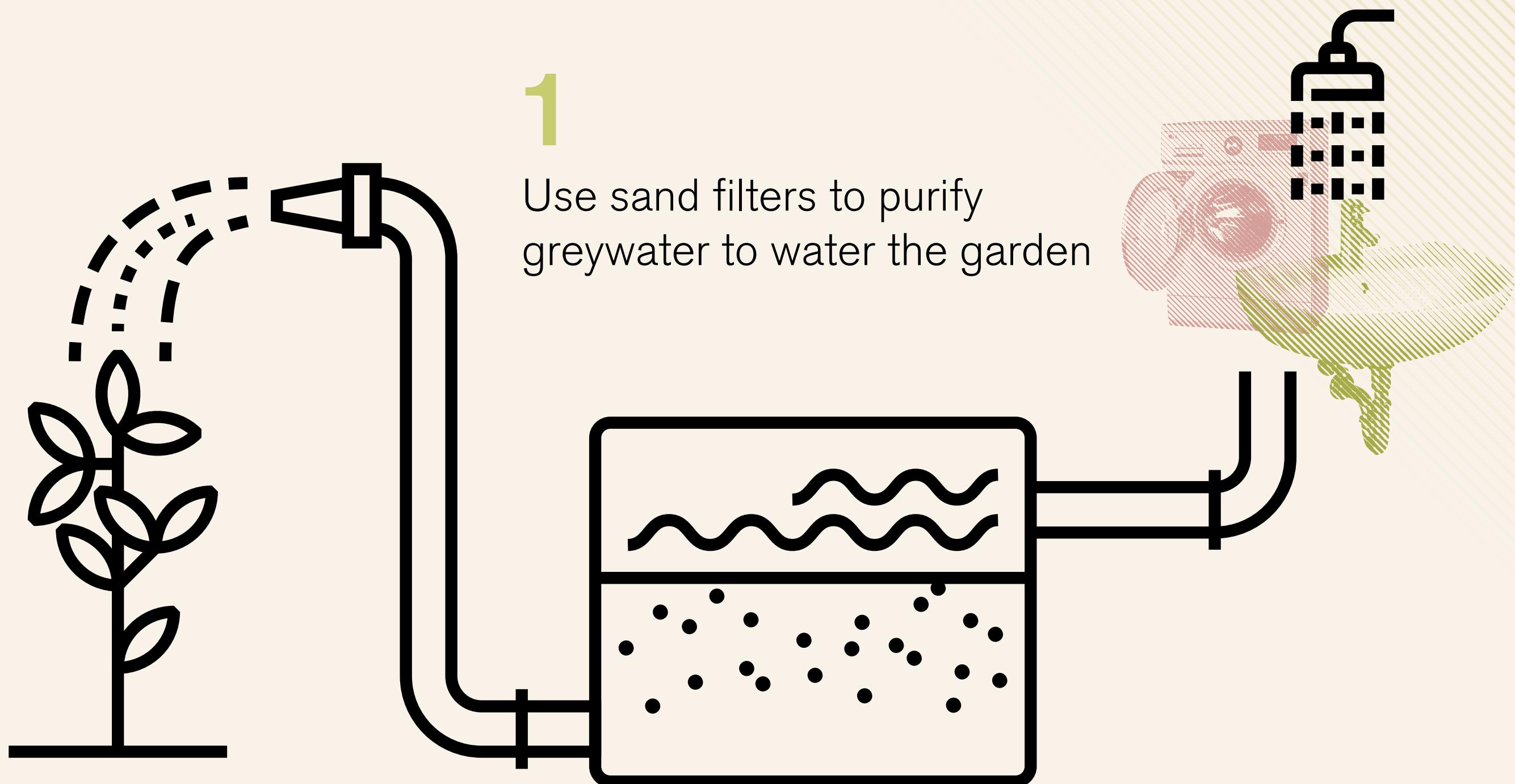
# Irrigation Inspiration: DIY Tips for Your Sustainable Garden

# Innovative Irrigation Tips



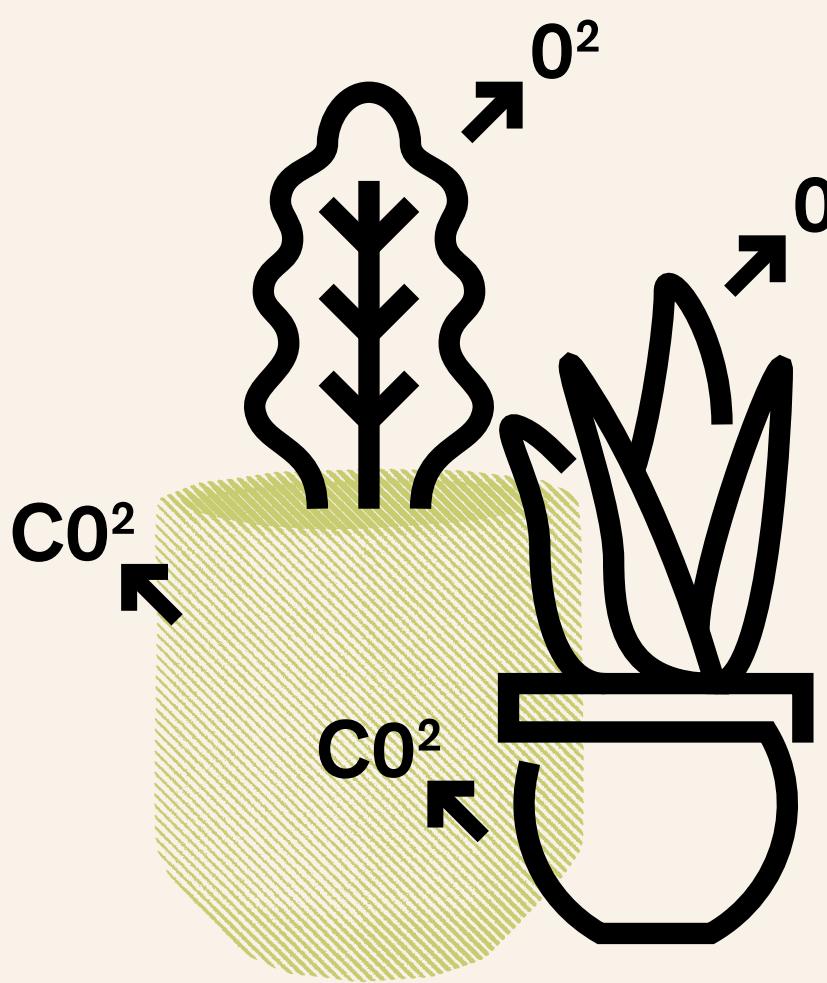
“ It would be great if you could build a system in your house to recycle used water in the kitchen that waters your garden.

— Antonella Cocco



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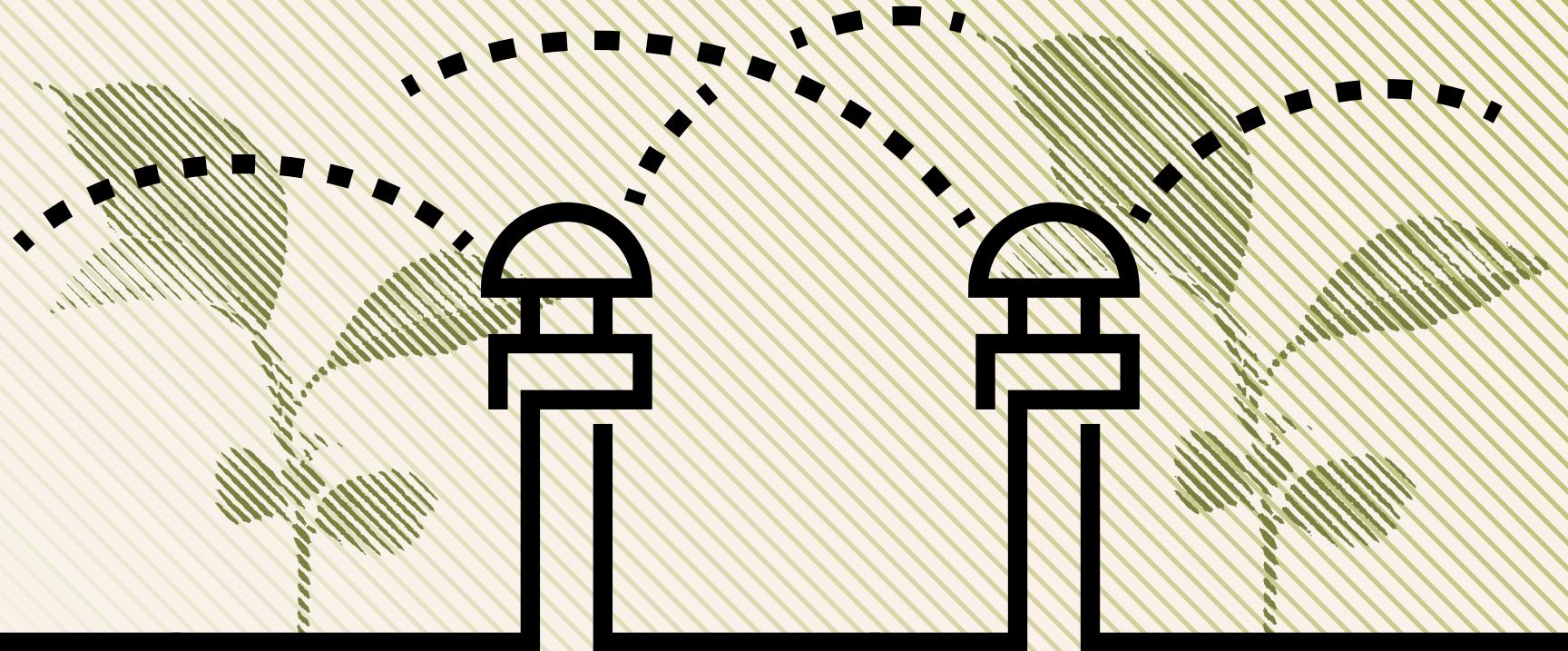
Use sand filters to purify greywater to water the garden



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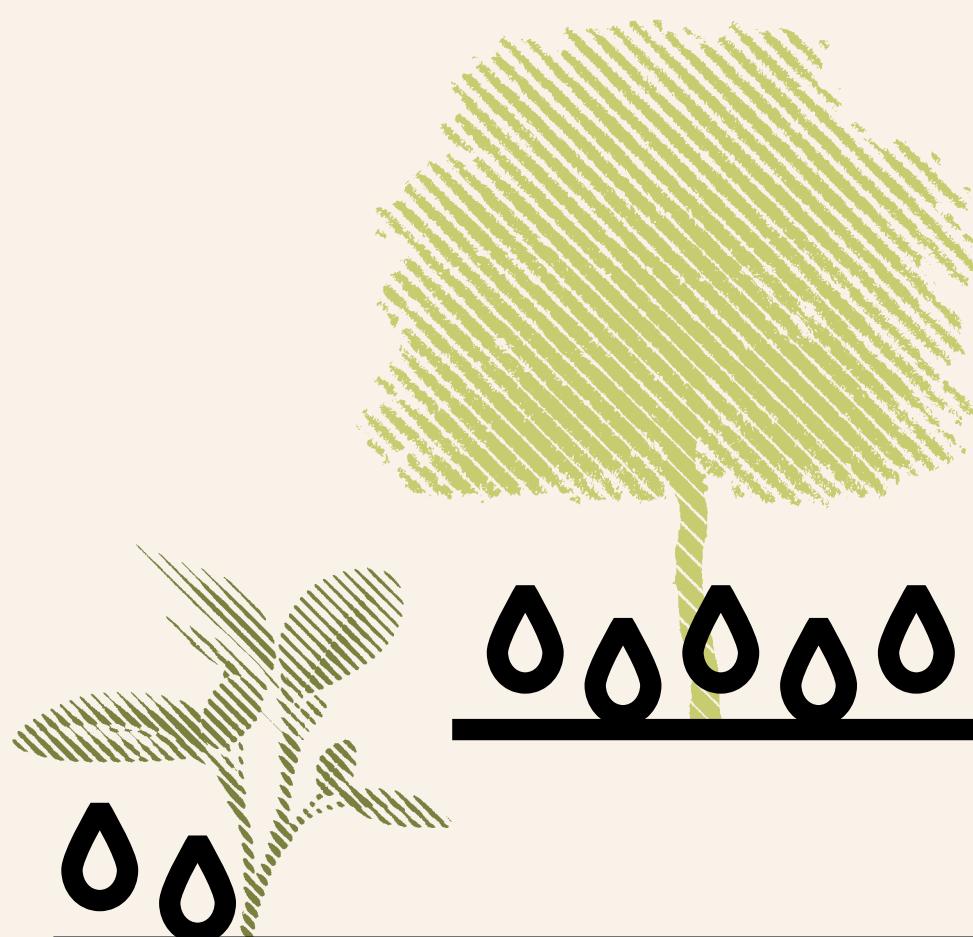
Limestone pots are highly recommended, as they release  $CO_2$  thereby nourishing plants. The plants then release Oxygen creating a virtuous cycle that is healthy for our plants and the environment!

# Irrigation Techniques



Most people find it difficult to water their plants every day. To solve that, Saeed Alrumaithi recommends the following:

Use a smart system to monitor and irrigate plants, offering an efficient and affordable way to manage watering schedules and plant health remotely.



- Provide each plant with a suitable drip irrigation system:
  - High volume for trees to ensure deep root hydration
  - Lower volume for plants to avoid overwatering and reduce water wastage

Plant in pots to significantly reduce the amount of irrigation water needed, as pots retain moisture better and require less frequent watering.



# Y(OUR) Mandate

Throughout our insightful and engaging reading journey, we have gained a deeper understanding of our nation's efforts and people's individual endeavours towards planting wisely. Inspired by role models like Eman, Saeed and Antonella, we'd like to leave you with a few additional tips to start planting today:

## Start Small

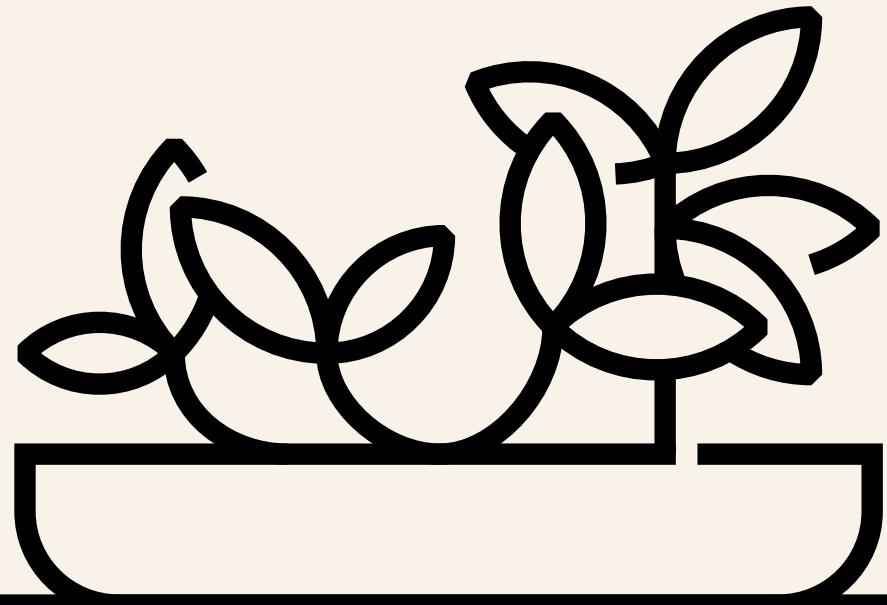
Begin with easy-to-grow plants and gradually expand your garden. Additionally, You can start by planting some of your favourite herbs in pots, on your balcony or by a sunny window sill.

## Use Natural Materials

Opt for compost made from kitchen scraps and natural fertilisers like animal manure.

## Innovate

Use technology to help manage and monitor your garden efficiently.



## Sustainable Consumption

Focus on creating a self-sustaining system where nothing goes to waste.



## Community

Engage with local communities and share your gardening experiences and tips.



## Keep Learning

Stay up-to-date with the world of agriculture and its latest innovations. We've created a handy guide to fruits and vegetables that flourish in the UAE climate.<sup>[15]</sup>



# Best Times to Plant Crops in the UAE [15]

Plant	Planting in the nursery	Planting in the field
Okra, Muskmelon, Watermelon	Feb - Mar	Mar - Apr
Cucumber	Feb - Mar Aug - Sept	Mar - Apr Sept - Oct
Zucchini	Feb - Mar Aug - Oct	Mar - Apr Sept - Nov
Pumpkin	Feb - March Sept - Oct	Mar - Oct
Armenian Cucumber	Feb Sept	Mar Sept - Oct
Sweet Potato	Feb - Mar Dec	- - -
Cowpea, Eggplant, Pepper, Tomato	Aug - Oct	Sep - Nov
Lettuce, Onion, Strawberry	Sept - Nov	Oct - Dec
Cabbage, Cauliflower	Sept - Dec	- - -
Leek, Broad Beans	Sept - Oct	- - -
Chard	Sept - Nov	- - -
Beans		Oct - Nov
Peas	Oct - Nov	Oct - Dec
Radish, Turnip	Oct - Nov	Nov - Dec
Beetroot, Carrot, Potato		- - -
Spinach	Oct - Dec	- - -
Garlic	Nov	- - -
Arugula	- - -	Feb - Mar Sept - Dec
Sweet Corn	- - -	Feb - Mar Oct - Nov
Coriander, Parsley	- - -	Oct - Nov
Celery	- - -	Nov

## Fun Gardening Tips to Cultivate Your Kids' Love for Plants!

Involve your kids in the planting process, from picking up the seeds to planting them.



Choose fast growing plants like beans or sunflowers

Teach them about plants, how to monitor and care for them



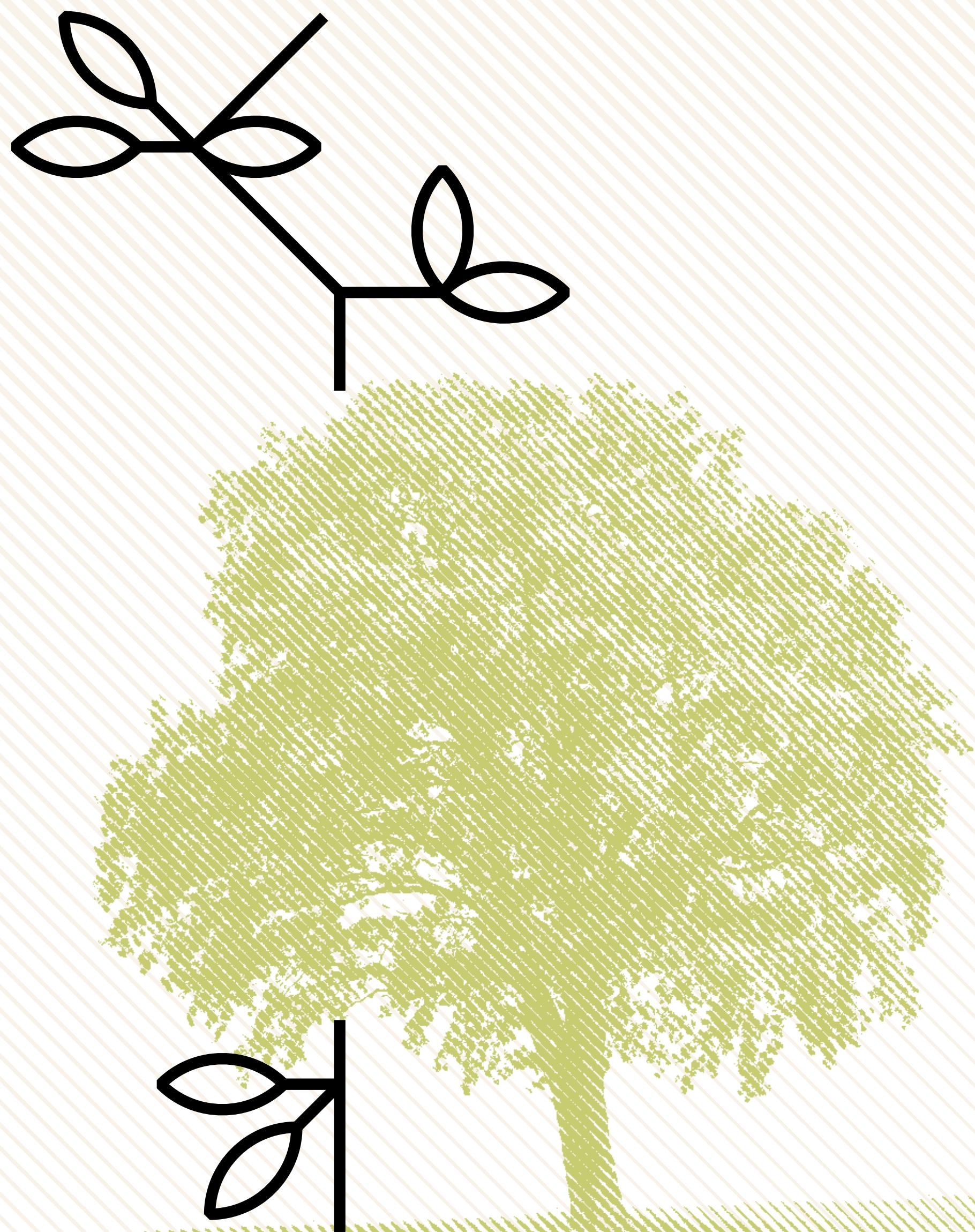
Get your kids excited about gardening by equipping them with their own mini gardening tools

You can also engage them by teaching them songs about planting and reading children's books together. These activities can ignite their interest and curiosity about various plants.



We hope that this guide has given you a sense of how important and impactful our individual efforts can be. Our nation's efforts stand as a symbol of our resilience and innovation, but the success of our efforts depends on the actions and commitment of each one of us.

**Your mandate is our mandate** – a shared responsibility to protect and nurture a greener tomorrow for ourselves and for future generations!



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SUSTAINABILITY

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