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UAE Ecological Footprint Initiative

We live in a world that is under increased pressure from population growth and increased demand for natural resources. This has resulted in nations consuming more resources than the planet can naturally regenerate, impacting our environment. It is crucial that we measure and address our consumption patterns in order to understand our impact on the planet and avoid collapse of natural resources.

What is the Ecological Footprint?

The Ecological Footprint is a sustainability indicator that tells us about the relationship between human consumption and the earth's resources. It is an accounting tool that measures a nation's impact on planet earth by comparing a population's demand on resources with nature's ability to renew these resources.

The Ecological Footprint can be utilized as a tool to answer the basic questions of what natural resources we have, how much of them we use and at what pace. We only have one planet and need to learn to live within the limits of that one planet.

THE UAE'S ECOLOGICAL FOOTPRINT

The UAE is a rapidly developing country that has experienced a long period of extraordinary economic growth. This has resulted in an increasing rate of consumption of natural resources such as energy, food, fibre and timber, which in turn has helped improve the quality of life of the country's population. By capitalising on its hydrocarbon wealth, the UAE has also been able to access natural resources that it does not possess from outside its borders. As a hot and dry country, the UAE requires energy for cooling and for desalination of domestic water supplies.

These combined factors have resulted in a high per capita Ecological Footprint – currently amongst the highest in the world at 10.68 global hectares (gha) per person, although this represents just 0.3 % of humanity's total Ecological Footprint. It is also important to note that the data in the 2010 Living Planet Report relates to the year 2007. Therefore the impact of groundbreaking initiatives such as Masdar, Estidama, new public transport networks, renewable energy generation and energy/water demand management programmes have not yet been accounted for.

Nevertheless, the UAE has taken a serious and innovative approach towards understanding and managing its Ecological Footprint through the Al Basma Al Beeiyah Initiative (Ecological Footprint Initiative).

**The Ecological Footprint
of the UAE is at 10.68
gha/person**

AL BASMA AL BEEIYAH INITIATIVE

UAE is the 3rd country in the world to embark on such in-depth research

In 2006, the Living Planet Report ranked the UAE as having the highest per capita Ecological Footprint in the world. In response, the Al Basma Al Beeiyah Initiative was launched in October 2007 by a partnership comprising the Ministry of Environment and Water (MOEW), the Environment Agency-Abu Dhabi's AGEDI (Abu Dhabi Global Environmental Data Initiative) programme, the Emirates Wildlife Society in association with WWF (EWS-WWF), and the Global Footprint Network (GFN). The aim of the Initiative was to work together to better understand the Ecological Footprint of the UAE, and monitor consumption patterns in the country.

By launching this Initiative, the UAE became the third country in the world to embark on such in-depth research, after Switzerland and Japan, and the first to develop scientific achievements to address the problem. The Initiative's mission statement of "a national effort to ensure a sustainable future by measuring and understanding the impact of our ways of living on planet earth" was complemented with a set of clearly defined objectives:

- sourcing data integrity
- conducting nation-specific research
- contributing to methodological improvements
- fostering capacity-building
- recommending and assisting in the development of policies
- awareness-raising amongst all sectors

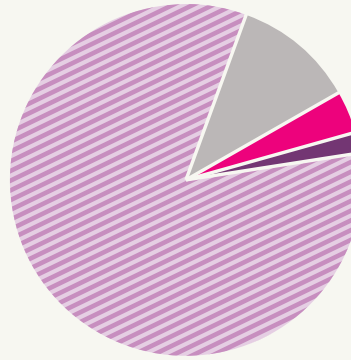
THE INITIATIVE'S ACHIEVEMENTS

Since 2007, the Initiative has helped UAE government institutions and civil society build capacity and foster in-country knowledge and expertise. It has done this through collaboration between the public and private sectors, the undertaking of cutting-edge research, the development of innovative policies, and action in support of reducing the country's Ecological Footprint and helping to tackle related issues such as climate change. As a result, some of the world's most advanced Ecological Footprint research has been undertaken in the UAE, and innovative awareness-raising projects have been launched with support from the highest levels of government.

The Initiative initially conducted research into, and verification of, UAE Ecological Footprint data. Following on from this, key drivers of the Ecological Footprint were identified. Research showed that UAE households are responsible for 57% of the UAE's consumption, followed by business/industry and the government sector with 30% and 12% respectively. This helped inform the development of a sustainable lifestyles campaign known as 'Heroes of the UAE'. Co-developed by EWS-WWF and EAD, this campaign has aimed to raise awareness of the Ecological Footprint, its relationship with climate change, and how consumers can help reduce it by conserving energy and water.

**UAE households are
responsible for 57% of
the UAE's consumption**

Footprint by Land type
(based on 2008 LPR data)

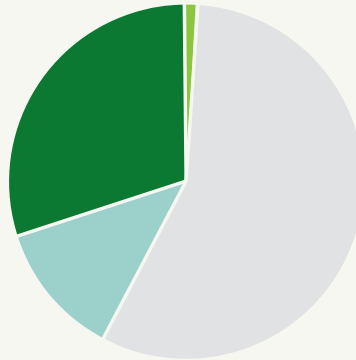


Key

- Built-up land 0%
- Crop land 11%
- Grazing land 0.3%
- Forest land 4%
- Fishing ground 2%
- Carbon uptake land 83%

This chart illustrates the UAE's Ecological Footprint broken down into the Footprint land types. The carbon Footprint constitutes 83% of the UAE's Ecological Footprint.

UAE Footprint by three players of society
(based on 2008 LPR data)



Key

- Household 57%
- Government 12%
- Business Industries 30%
- Other 1%

This chart breaks down the UAE's Ecological Footprint according to its main contributors.

The Initiative has also developed an innovative electricity and water scenario model for the UAE. Researchers from the Masdar Institute (MI) and EWS-WWF have led the development of this model, which aims to help policy-makers understand how the development of the power and water sector might affect the UAE's carbon dioxide (CO₂) emissions and Ecological Footprint up to 2030, and to develop alternative lower- Footprint scenarios.

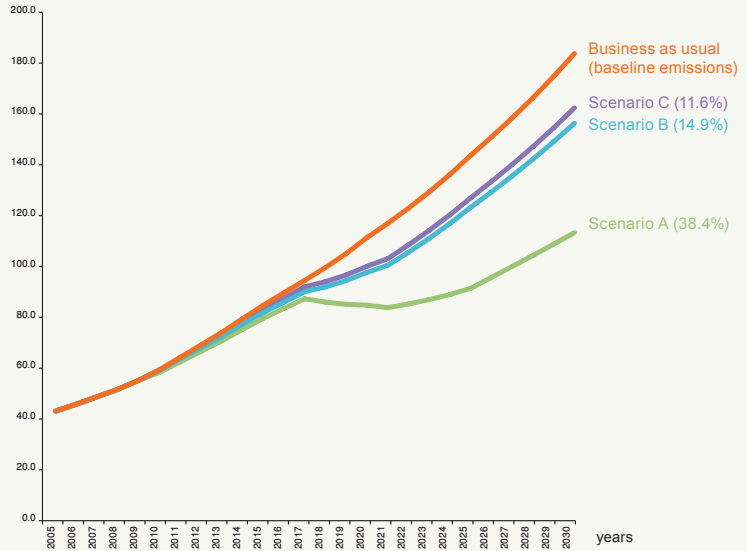
To explain how the scenario model works, the graph overleaf illustrates three hypothetical scenarios in which Abu Dhabi could reduce its CO₂ emissions by 11-38% in the year 2030. The scenarios offer different CO₂ savings based on more ambitious targets for energy and water supply and demand policies (see graph for further information). While the scenario modelling results show that it is possible to reduce Abu Dhabi's emissions, they do not give an indication of the social or economic costs. These assessments would be required if UAE entities wish to implement the different policy mixes.

This model has been based on an assessment of the UAE's planned developments and the implementation of policies tackling both energy and water supply and demand (see graph above for further detail on the types of policies assessed). The CO₂ emissions scenarios will also be converted in Ecological Footprint terms, whereupon this kind of analysis will be a world first and also help develop targeted policies for all of the UAE. Ultimately the aim is to generate useful, relevant and robust scientific analysis that government leaders can use to decide on how to make the UAE economy more sustainable. The technical work has been extensively informed by a comprehensive stakeholder consultation process in which key technical experts and policymakers from government institutions provided input, data and expertise.

**A scenario modelling
tool developed by the
Initiative to assist policy
makers**

Percentage reduction of Abu Dhabi's CO₂ emissions for three hypothetical scenarios compared to the baseline (2005-2030)

Total CO₂ emissions (mega tonnes)



Scenario A (38.4%)

- Strong Building Envelope Standard with 60% reduction in cooling demand
- High End energy star equipment standard
- Indoor and outdoor water equipment standard
- 50% Electric Vehicle penetration by 2030
- Four nuclear power plants of capacity 1.45 GW by 2021
- 15% Renewable Energy Capacity by 2020
- Reverse Osmosis – installation of thirteen 60 MG desalination plants (2018-2030)
- 100% TSE reuse by 2030
- 10% Carbon Capture and Sequestration by 2030

Scenario B (14.9%)

- 200% increase in Electricity and Water Tariff by 2030
- Four nuclear power plants of capacity 1.45 GW by 2021
- 15% Renewable Energy Capacity by 2020
- 10% Carbon Capture and Sequestration by 2030

Scenario C (11.6%)

- Four nuclear power plants of capacity 1.45 GW by 2021
- 15% Renewable Energy Capacity by 2020
- 10% Carbon Capture and Sequestration by 2030

As well as its scientific achievements and progress in aiding sustainable policy-making, the Initiative has also developed a range of educational and awareness-raising materials to increase wider understanding of the Ecological Footprint concept. This has included an animated film, an Ecological Footprint website, government workshops, university lectures, and community events.

The Initiative has conducted ground-breaking research, raised capacity within local institutions, and raised awareness of the Ecological Footprint in order to help the UAE develop effective policies that will result in real footprint reductions.

Through this Initiative, the UAE has taken a serious step towards helping the global community meet the challenges of sustainable development. It is hoped that other nations will be inspired to make similar commitments.



Still shots from the Ecological Footprint animation

For more information about the Ecological Footprint visit:
www.ecologicalfootprint.heroesoftheuae.ae

For more information about the partners visit:
www.moew.gov.ae
www.ead.ae
www.ewswf.ae
www.footprintnetwork.org