

Aquaponics & Hydroponics

What are Aquaponics & Hydroponics, how do they differ from traditional agricultural practices? What are their advantages & drawbacks, cost, and barriers to implementation?

Expert Name: Ryan Lefers

PHD - KAUST University

CEO - A&A Epiphany



Short Profile: Ryan Lefers is a Professional Engineer and the co-founder of A&A Epiphany, a consulting company offering services in sustainable agriculture and water. Currently, he is conducting research at King Abdullah University of Science and Technology (KAUST) in novel methods for water reuse, sustainable agriculture, greenhouse cooling, aquaponics, and urban agriculture.

Expert Name: Hussam Hawa

Director

DIFAF



Short Profile: Hussam Hawwa is an agricultural engineer and water resources management expert with more than 10 years of experience in Lebanon and abroad on variety of projects covering sustainable agriculture, water quality assessments and reuse, and natural wastewater treatment systems. Hussam has also founded of Difaf, a consultancy and design company for environmental projects tailored for water conservation. Difaf has recently won first-prize at AUB's Claude-Abilama Award for designing a business plan of a modular aquaponics system in order to pioneer it in Lebanon.

Expert Name: Marc Aoun

Environmental Scientist



Short Profile: Environmental consultant with 3 years' experience in conducting impact assessments for industries, development of policies and resource management systems in the fields of water, agriculture and waste. Graduate of the University of Utah with a B.S in Environmental Sciences and Sustainability Studies, and a previous employee of the United Nations Economic and Social Commission for Western Asia and Earth-Link and Advanced Resource Development (ELARD). Currently, developing a commercial aquaponics facility and co-founder of Compost Baladi, a waste management company.



Definition / Benefits	Constraints / Challenges / Barriers
<ul style="list-style-type: none">✓ Hydroponics = planting in water✓ Aquaponics = fish farming + planting in water✓ Aquaponics= aquaculture + hydroponics	<ul style="list-style-type: none">✓ Providing fresh water fish✓ Not considered or labelled “organic”✓ Customizes fish tanks✓ Competition with local farmers notion of “organic”✓ Power constraints (none constant)
Best Practice / Solutions / Tools	Resources / local Availability
<ul style="list-style-type: none">✓ Small scale system in your own house✓ Reduces water usage by 70%✓ It's a good solution to enhance the 5th façade (the roof) of the buildings which adds more “space” for the people. Since in Lebanon we lack the public green space	<ul style="list-style-type: none">✓ Available where water exists✓ Material easy to find✓ In Lebanon, it's not as easy. You sometimes need to construct it.✓ Maybe could be introduced as an Ad hoc system to already existing fish farms in Hermel