

<b>Project Name</b>
AlphaGrow: AI-Powered Vertical Farming Solutions
<b>Name of the beneficiary government entity</b>
Ministry of Agriculture and Land Reclamation
<b>Contact name</b>
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<b>Executive Summary</b>
AlphaGrow is a transformative Agritech initiative that deploys <b>AI-driven vertical farming systems</b> tailored for urban environments. It integrates artificial intelligence, IoT, and data automation to optimize crop yield, reduce operational inputs, and achieve sustainability in food production. The solution addresses three global pressures: <b>food insecurity, climate resilience, and urbanization</b> .
<b>Add Value / Innovation</b>
<div><div>1.</div><div>◦ Strategic Objectives: •Launch two fully functional AI-optimized urban vertical farms within 30 months.</div></div> <div><div>2.</div><div>◦ Strategic Objectives: •Increase yield per square meter by 30% over traditional vertical farms using AI control.</div></div> <div><div>3.</div><div>◦ Strategic Objectives: •Cut energy consumption of indoor farms by 20% through smart automation.</div></div> <div><div>4.</div><div>◦ Strategic Objectives: •Support national smart-city strategies by integrating vertical farms into urban planning.</div></div> <div><div>5.</div><div>◦ Strategic Objectives: •Capture a 15% market share in the MENA smart agriculture market by 2028.</div></div>
<b>Target Impact</b>
AlphaGrow targets a broad spectrum of urban consumers, municipalities, and private food distributors. The initial rollout will serve as a scalable model for other high-density Arab urban centers, with population coverage exceeding 5 million in the pilot phase. It directly contributes to national strategies on food security and digital innovation.
<b>Value / Innovation &amp; Core Technological Features</b>
<div>◦ Proprietary AI Engine: Monitors, predicts, and controls environmental factors in real time.</div> <div>◦ IoT Sensor Matrix: Tracks temperature, humidity, nutrient levels, and crop growth dynamically.</div> <div>◦ Hydroponic &amp; Aeroponic Systems: Tailored to urban vertical layouts.</div> <div>◦ Operational Dashboard: Real-time visualization, reporting, and system control.</div> <div>◦ Remote Farm Management: Enables centralized supervision of distributed farms.</div>
<b>Business Model &amp; Scalability</b>
AlphaGrow is structured as a co-investment project, led by a local technology integrator. Revenue will be generated via crop sales, licensing of the AI system, and turnkey delivery of vertical farm units to third parties. The project is commercially replicable in other MENA countries and could serve as a launchpad for Chinese agricultural technology in the Arab world. Revenue-sharing terms will ensure equitable return based on investment ratios and market performance.
<b>Untitled</b>
<div><div>1.</div><div>◦ Expected Deliverables: Creating a data center with a capacity of 100 servers</div></div> <div><div>2.</div><div>◦ Expected Deliverables: Designing a user interface for license management</div></div>
<b>Untitled</b>
<div><div>1.</div><div>■ Human Resources: Farmres</div><div>■ The Number: 14</div></div> <div><div>2.</div><div>■ Human Resources: IT Manager</div><div>■ The Number: 2</div></div>
<b>Untitled</b>
<div><div>1.</div><div>◦ Dedicated Assets: Training hall with an area of 80 m²</div></div> <div><div>2.</div><div>◦ Dedicated Assets: Hydroponic testing laboratory</div></div>
<b>Local Readiness &amp; Commitment</b>
The project has received formal endorsement at a senior governmental level. Technical, legal, and operational studies are completed. A \$2.5 million investment has already been committed locally, alongside R&D facilities, engineering teams, and an initial deployment plan.
<b>The partner's role and responsibilities</b>
<div>The project seeks a Chinese partner with strength in:</div> <div>■ AI optimization, 5G integration, IoT hardware, or indoor climate systems.</div> <div>■ Co-investment: \$2 million cash, plus \$1 million in in-kind contributions (equipment, manufacturing support, supply chain access).</div> <div>■ Joint product development and potential <b>re-export of solutions to African or Asian markets</b>.</div>
<b>Financial estimate of the Chinese partner's contribution</b>
\$2 million cash, plus \$1 million in in-kind contributions
<b>Details of assets and technologies</b>
50 NVIDIA A100 GPU servers. • A private cloud management platform (IaaS) with APIs. • A 5-day training course for 15 employees on using the platform
<b>Joint financing ratio</b>
50% Fund / 50% Partner
<b>Return Model</b>
20% revenue sharing Profit sharing as a share of equity as a partner Fixed monthly rent
<b>Untitled</b>
<div><div>1.</div><div>◦ Stag: Start Date</div><div>◦ Description: September 2025</div><div>◦ Deadline: Duration: 36 months</div><div>◦ Main outputs:</div></div> <div><div>2.</div><div>◦ Stag: Pilot Farm 1 Launch</div><div>◦ Description:</div><div>◦ Deadline: Q1 2027</div><div>◦ Main outputs:</div></div> <div><div>3.</div><div>◦ Stag: Pilot Farm 2 Launch</div><div>◦ Description: Q3 2027</div><div>◦ Deadline:</div><div>◦ Main outputs:</div></div> <div><div>4.</div><div>◦ Stag: Commercial Market Entry</div><div>◦ Description: Q1 2028</div><div>◦ Deadline:</div><div>◦ Main outputs:</div></div>
<b>Untitled</b>
<div><div>1.</div><div>■ The Risk:</div><div>■ Level: Low</div></div>
<b>Partner type</b>
Governmental
<b>Previous Collaboration</b>
Yes
<b>Cooperation</b>
Huawei
<b>Preferred collaboration model</b>
BOT
<b>Proposed Chinese company name</b>
Syngenta Group China
<b>Feasibility Summary</b>
◦ <a href="#">AFDECN-process-2.pdf</a>
<b>Technical Specification</b>
◦ <a href="#">AFDECN-process-21.pdf</a>
<b>OTP Verification</b>
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