



Vertical Farming in Urban Cities

Article: Vertical Farming in Urban Cities

With more than half of the world's population living in cities, traditional farming faces a new challenge: how to feed billions in dense, urban spaces. A new solution gaining popularity is vertical farming, growing food in tall buildings using stacked layers, artificial lighting, and controlled indoor environments.

Unlike conventional farms, vertical farms don't need soil or vast land. Many use hydroponics, a technique that allows plants to grow in water rich with nutrients. These farms are climate-controlled, meaning crops can be grown all year round without the risks of droughts, floods, or pests. They also require significantly less water and can be built close to consumers, reducing the need for transportation and packaging.

Advocates argue that vertical farming is more sustainable and efficient than traditional agriculture. It minimizes land use, reduces food waste, and limits carbon emissions from transport. However, critics question the high energy consumption of artificial lighting and climate control systems. The start-up costs are also significant, making it hard for small farmers to enter the field.

Still, cities like Singapore, Tokyo, and New York are investing heavily in vertical farming. Some supermarkets even grow herbs and vegetables directly inside their stores. As climate change puts pressure on global food systems, urban farming may not just be a trend, it could be a necessity.





Vocabulary Practice

Word / Phrase	Definition
Vertical farming	The practice of growing crops in stacked layers, usually in urban buildings
Hydroponics	A method of growing plants using water and nutrients instead of soil
Sustainable	Causing little or no damage to the environment and able to continue long term
Climate-controlled	Maintained at a specific temperature and humidity
Efficient	Performing a task in a way that uses the least amount of resources
Drought	A long period with little or no rain
Carbon emissions	Release of carbon dioxide into the atmosphere, often from vehicles or factories
Advocate	A person who supports or recommends a particular cause or policy
Startup costs	The amount of money needed to begin a new business or project
Necessity	Something essential or required

Comprehension Questions

1. What is vertical farming and how does it differ from traditional farming?
2. Why is hydroponics useful in vertical farms?
3. What are the environmental benefits of vertical farming?
4. What are some of the criticisms or challenges of vertical farming?
5. Why might vertical farming become more important in the future?
6. Which cities are already investing in vertical farming projects?
7. How might vertical farms help reduce food waste and transportation needs?

Discussion Questions

1. Have you ever seen or visited a vertical farm? Would you like to?
2. Do you think vertical farming is a realistic solution for global food problems? Why or why not?
3. Would you trust food grown without soil and sunlight?
4. What do you think are the biggest challenges to growing food in cities?
5. Should governments support urban farming financially?
6. Would you pay more for food that was grown sustainably in your city?
7. Could vertical farming help poorer countries or communities? How?
8. What role should technology play in future agriculture?
9. Do you think schools should teach students about sustainable farming?