

## Problem

In poor urban areas, there is limited access to cheap, fresh, and healthy vegetables.

## Research

- A projected population of 9.6 billion people by 2050. 70% in cities by 2030.
- Stores do not stock fresh vegetables
- Consumers cannot afford fresh vegetables
- Low urban food security means higher rates of malnutrition

## Possible Foods

Peppers, herbs, lettuce, tomatoes, microgreens, strawberries, spinach.

## Solution

An inexpensive and easy to build vertical farm for people to grow their own fresh food.







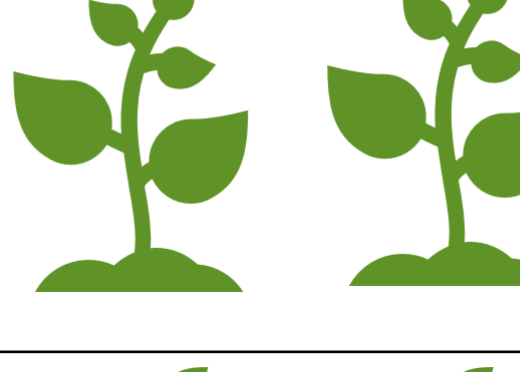
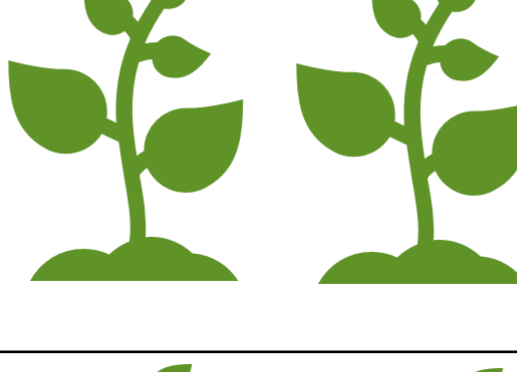
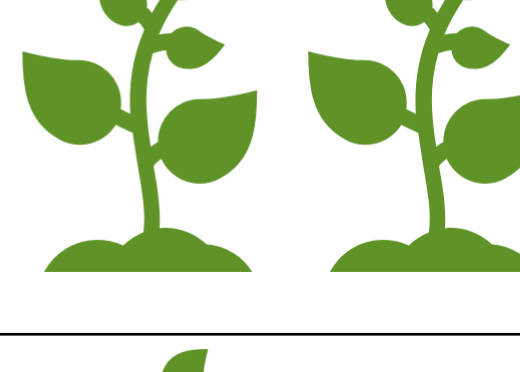
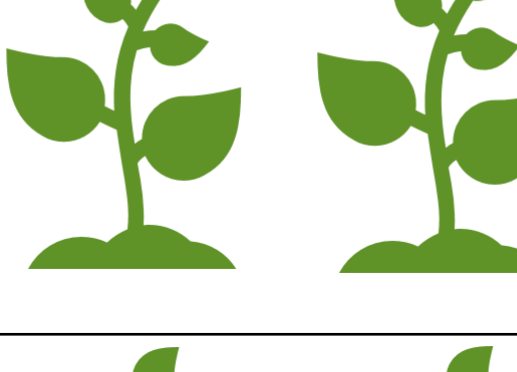


## Prototypes

### Prototype A:

Manually watered string of 2-liter bottles. The water can drip from bottle to bottle for easier watering.

### Prototype B:

The same design as A but with a French drain system. This allows it to water itself.

Key	Solutions	
	Prototype A Measured	Prototype B Theoretical
1 plant– Bad 2 plants– Moderate 3 plants– Good		
Criteria		
Cost		
Ease of Building		
Ease of Upkeep		
Output per Unit		
Time to Construct		
Self-Watering		

## Results

### Prototype A:

All criteria met and exceeded. 6 out of the 7 radish seeds planted grew. Prototype A produces below market price.

### Prototype B:

Does not have definitive results. Projected to have identical output to A. More expensive, but theoretically easier to upkeep.



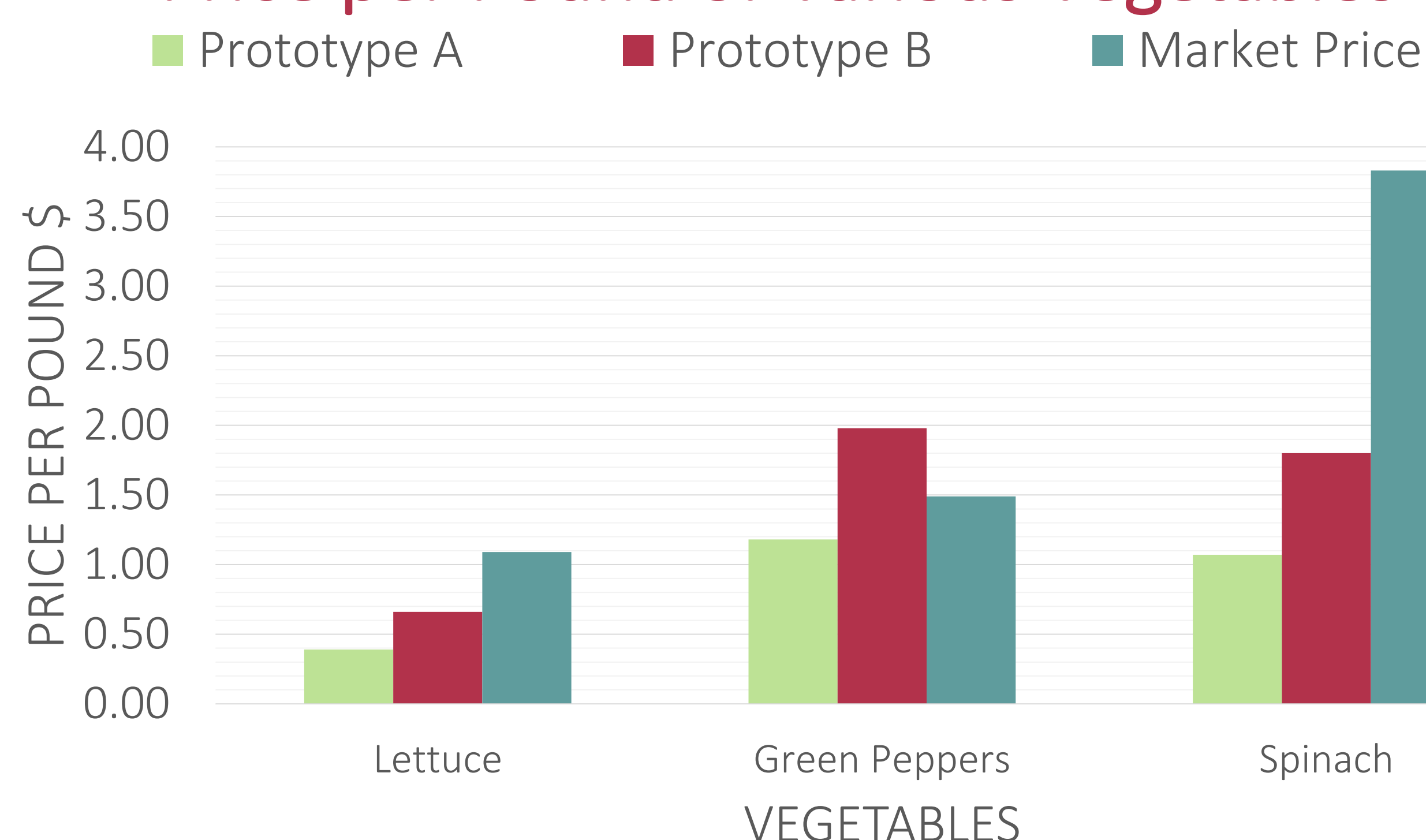
## Conclusion

Our vertical farm output is less expensive than retail vegetables. This makes the vertical farms a feasible solution to our problem.

## Acknowledgements

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## Price per Pound of Various Vegetables



## References

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