

Implementing Aquaponics

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Problem

Ladson, SC has a food desert where 85% of residents have low access to food.

Solution

Start

- Acquire funding and permits
- Purchase land and materials

- Set-up system
- Train workers

Continuing Operation

- Sell products onsite
- Pay back loans
- Maintenance

Costs

- Takes up land
- Construction will create pollution
- Startup cost starts at \$20,000
- Operating cost starts at \$47,000

Problem

Lack of healthy Food

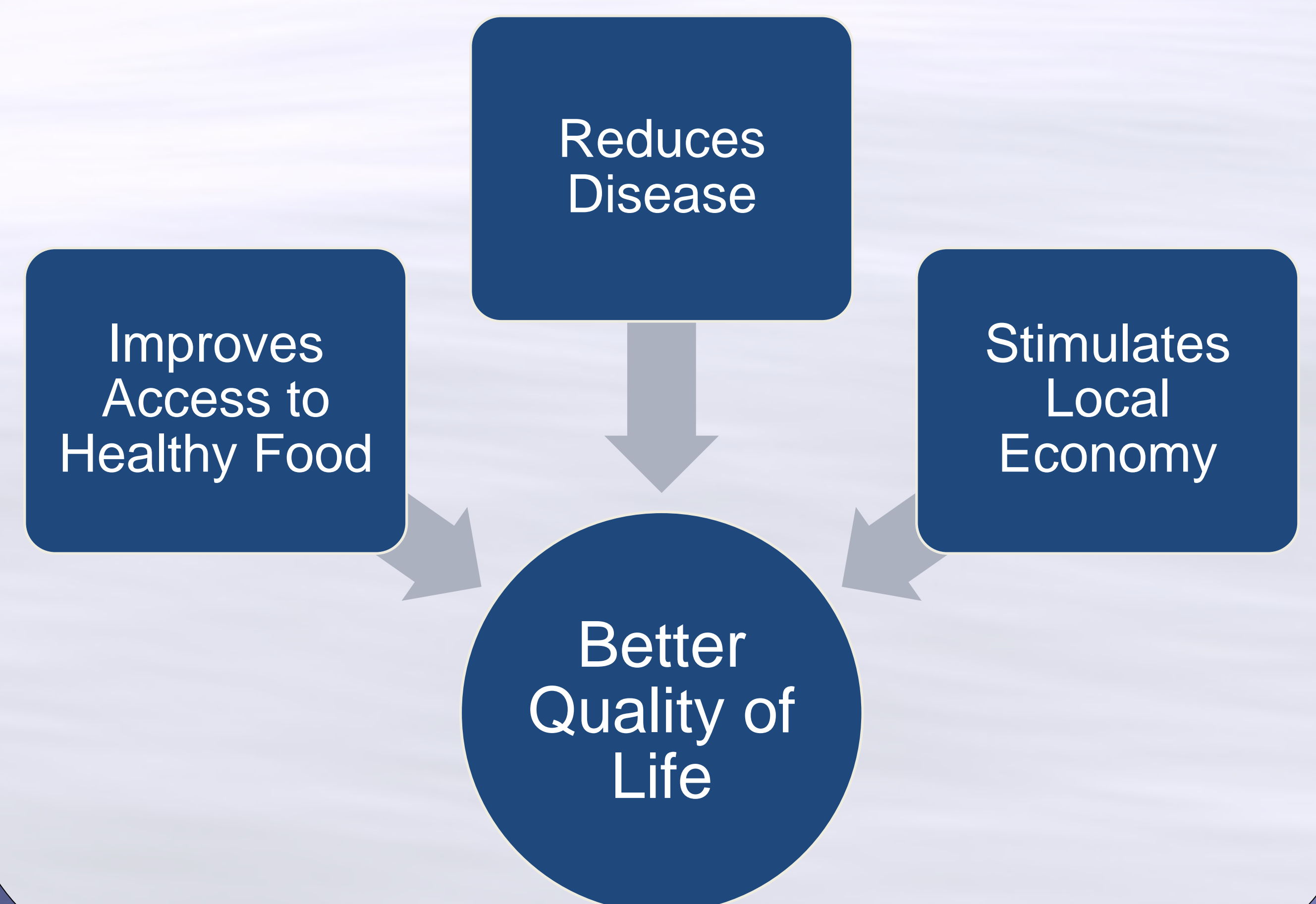
General Solution

Increase availability of fresh food

Specific Solution

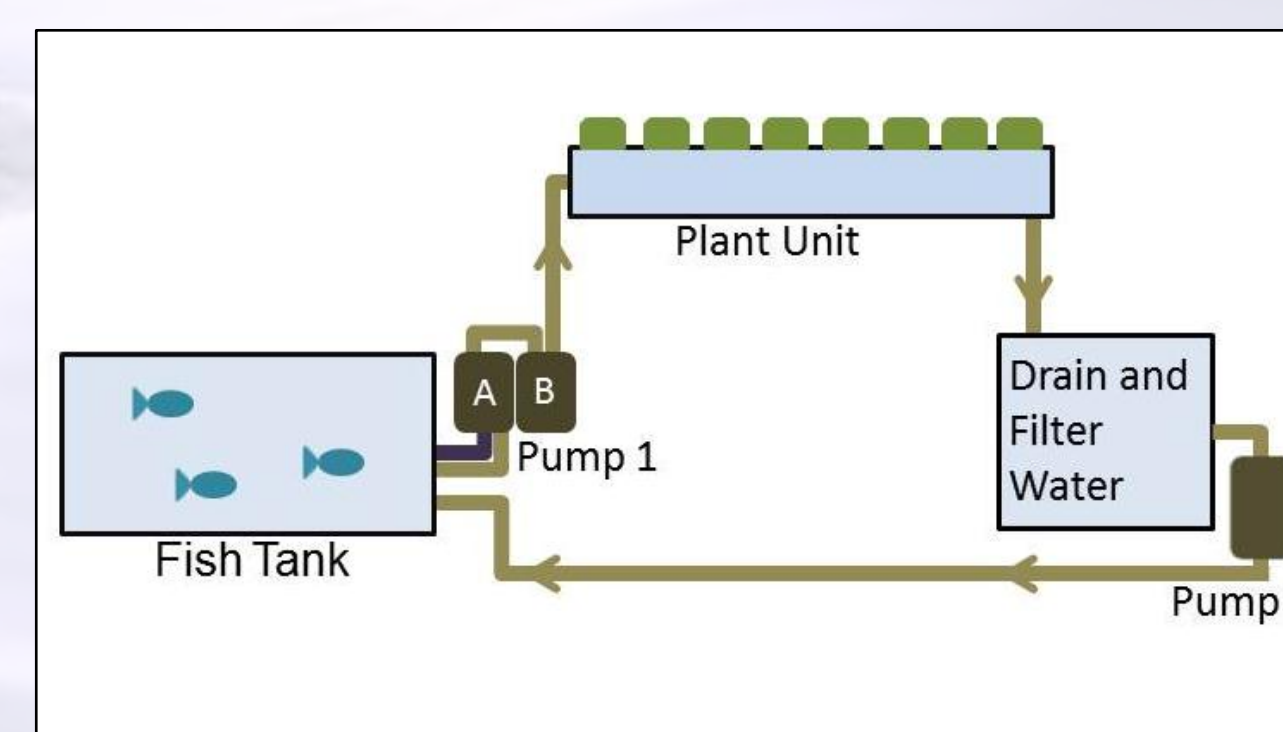
Aquaponics to produce fresh produce and fish

Benefits



Aquaponics

- Provides fresh food
- Produces food year-round
- Produces tilapia and leaf vegetables
- Uses fish waste as fertilizer
- Each unit makes \$7,000 net profit

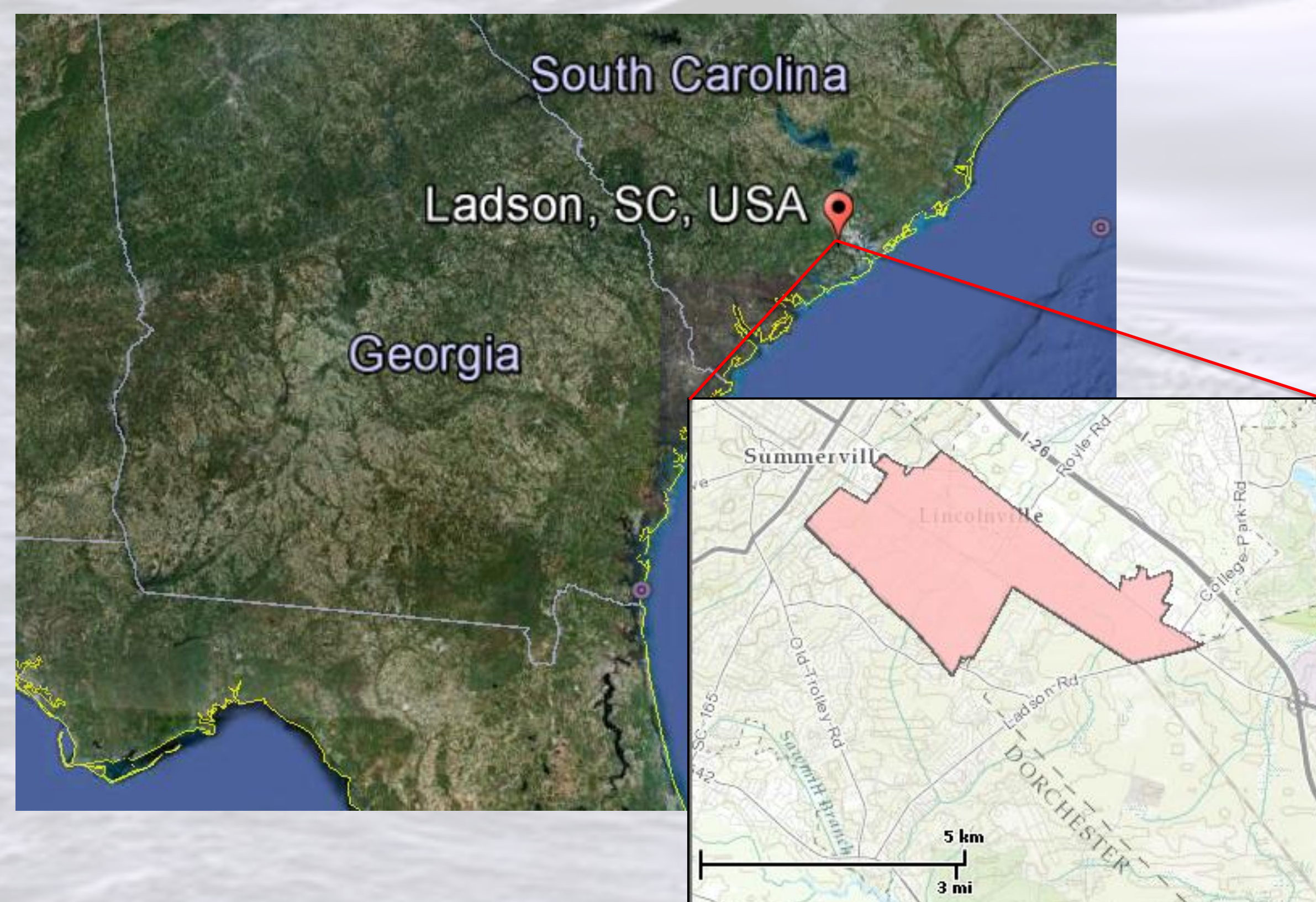


Other Solutions

- Vertical farming
- Urban gardens
- Grocery store shuttles

Ladson Food Desert

- Population: 4,053
- Average household income: \$47,819
- Unemployment rate 7.8%
- 16% low income and low access



Assessment

- Financial records
 - Determine the success as a business
- Before and after survey
- In the long term, USDA food desert locator

References

http://en.wikipedia.org/wiki/File:Global_total_fish_harvest.png
http://en.wikipedia.org/wiki/File:Aquaponics_with_catfish.jpg
http://en.wikipedia.org/wiki/File:Portable_fish_farm_at_growing_power.jpg
 Economic Research Service (ERS). (2012). *Food Desert Locator*. Washington DC: U.S. Department of Agriculture (USDA). Retrieved from <http://www.ers.usda.gov/data-products/food-desert-locator/go-to-the-locator.aspx>.
 Epipelagic. (2012). Global total fish harvest.
 Haglund, K., & Pedersen, M. (1993). Outdoor pond cultivation of the subtropical marine red alga *Gracilaria tenuistipitata* in brackish water in Sweden. Growth, nutrient uptake, co-cultivation with rainbow trout and epiphyte control. *Journal of Applied phycology*, 5(3), 271-284.
 Johanson, E. K. (2009). Aquaponics and Hydroponics on a Budget. *Tech Directions*.
 Somma, R. Aquaponics With Catfish.
 vinz, c. Portable fish farm at growing power.