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Weathering the Perfect Storm

2019
Marc Noyce

Transforming cities into water catchments and urban farms

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Biofilta approaches urban farming at a low tech, low cost and accessible level

Top reasons not to grow food

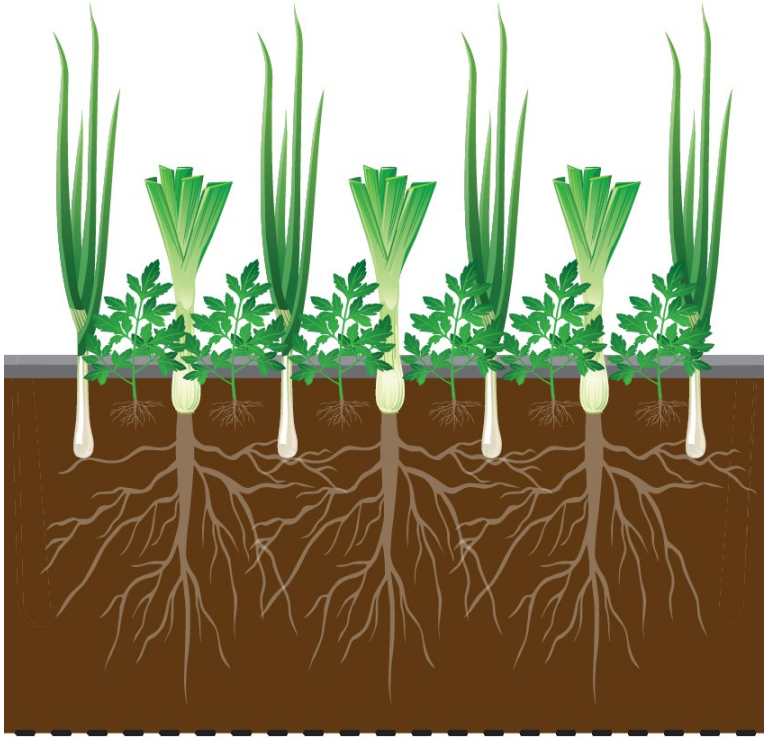
Not enough time

Not enough space

Not enough expertise

Supermarkets too convenient

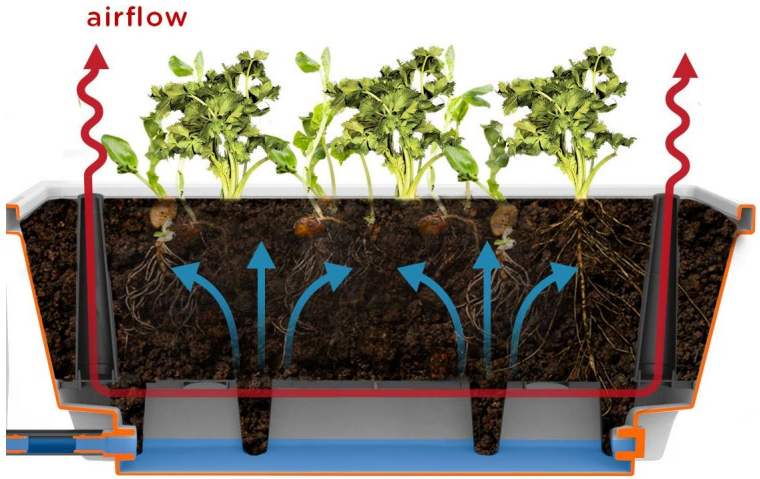
Traditional Garden Beds



- Water intensive
- Weed intensive
- Labour intensive

Advances In Wicking Gardens

- ✓ Low water use
- ✓ No irrigation pipes or ag lines
- ✓ Plants access all the stored water
- ✓ Higher yield
- ✓ Aeration to the roots
- ✓ More constant watering of plants



Launch Food – Innovation X Change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2 car space test farm
Port Melbourne, Victoria

Target

Grow 150kgs of fresh produce in each car space within 12 months

WHO/FAO target for annual fresh produce consumption


1/5
handy crate

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Even a city car park space..



2 Car spaces = 20m2



300kg grown in 6 months = vegetable intake for 2 Adults

Tuvalu perched gardens

DFAT/Australian Aid project

Tuvlau is located 1,000km north of Fiji in the Pacific Ocean.

The island of Funafuti has 6,000 residents and an average elevation of 1.83m above sea level

GROWING FOOD ON AN ISLAND

Sustainable food growing needs:

- Access to water
- Growing media such as compost
- Replenishable nutrients for plants
- Seedlings
- Closed nutrient loop
- Land area
- Education

GROWING FOOD ON AN ISLAND - WATER

100% dependant on roof water for everything!

Many water tanks have been installed to collect rain water – 3,000mm pa falls on Funafuti

ISLAND - WATER

Much more can be done to collect more water for food growing

Maximising water capture allows the most food and water security to occur.

Rainwater is high quality water suitable for drinking and growing food.

ISLAND - SOIL

Funafuti has nearly zero topsoil and is primarily coral scree.

This material is highly alkaline and not good for growing vegetables.

Some plants tolerate high alkalinity like the coconut tree and other vegetation that has adapted.

Island - pH

pH affects how plants uptake nutrients

Higher pH means alkaline and nutrients aren't available to plants unless adapted

Few vegetables like pH above 7

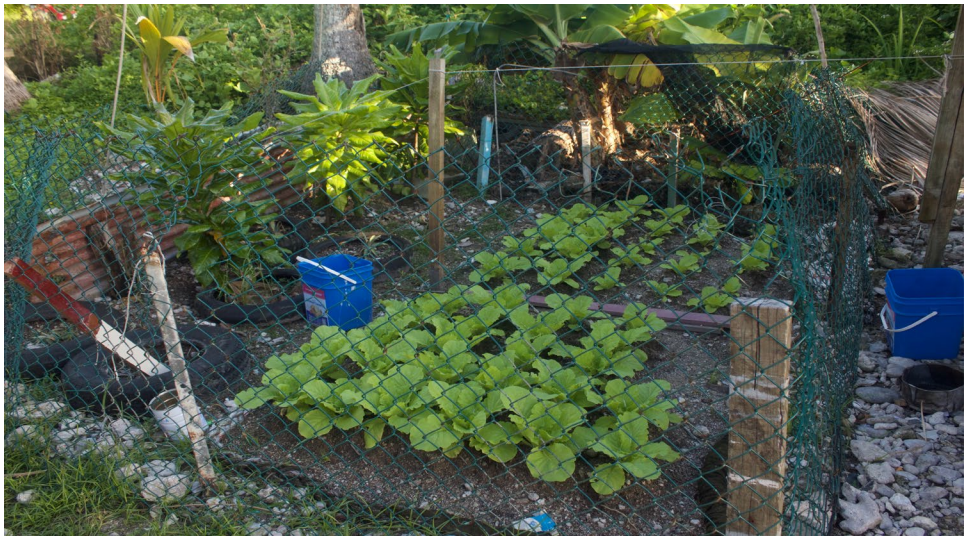
Tuvalu is coral scree – calcium = HIGH pH

ISLAND - COMPOST

Current green waste collection results in mixed rubbish piles that sit for long periods of time.

The green waste is exposed to sea water intrusion as it is located on one of the lowest areas in on the island which is inundated during high tides.

ISLAND – Traditional Approach



TRIAL GARDENS IMPLEMENTED

200 Foodwall Step units = 100 m2 total

50% in July 2018

50% in Sep 2018

Local install team overseen by Biofilta staff

Local monitoring and reporting

UNIVERSITY OF SOUTH PACIFIC

Harvested and replanted Week 4

Week 1

Week 3

Week 3

Week 5

Week 6

Week 7

TRIAL GARDENS IMPLEMENTED

RED CROSS

Before

Week 1

Week 5

TRIAL GARDENS IMPLEMENTED

RED CROSS

Week 6 Harvest

Produce sold to local families

TRIAL GARDENS IMPLEMENTED

HOME GARDENS

TRIAL GARDENS IMPLEMENTED

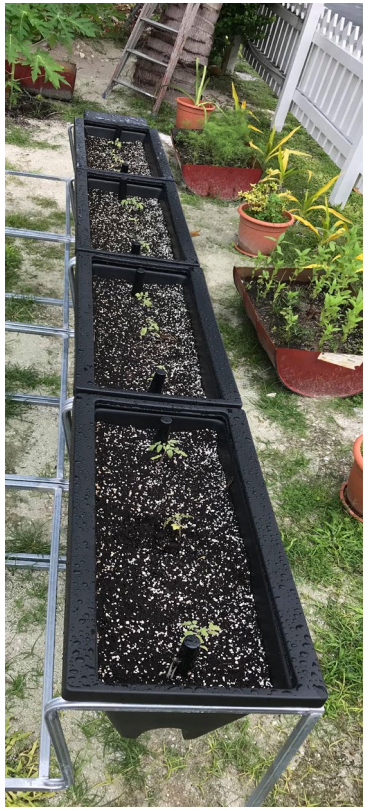
HOME GARDENS

Week 1

Week 3

TRIAL GARDENS IMPLEMENTED

Tomatoes being grown at home – very rare to see!



Week 1

Week 4

Week 5

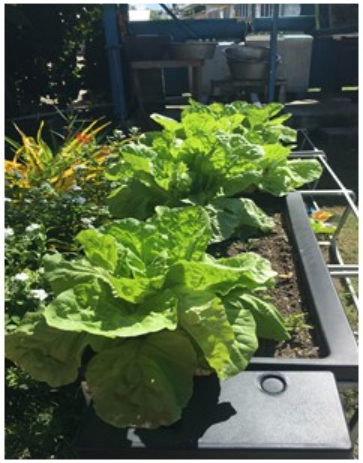
Pride taken with home made supports for plants

RESULTS







Key Learnings

Tuvalu has resources

RESOURCES

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Not everything goes to plan!

Learnings

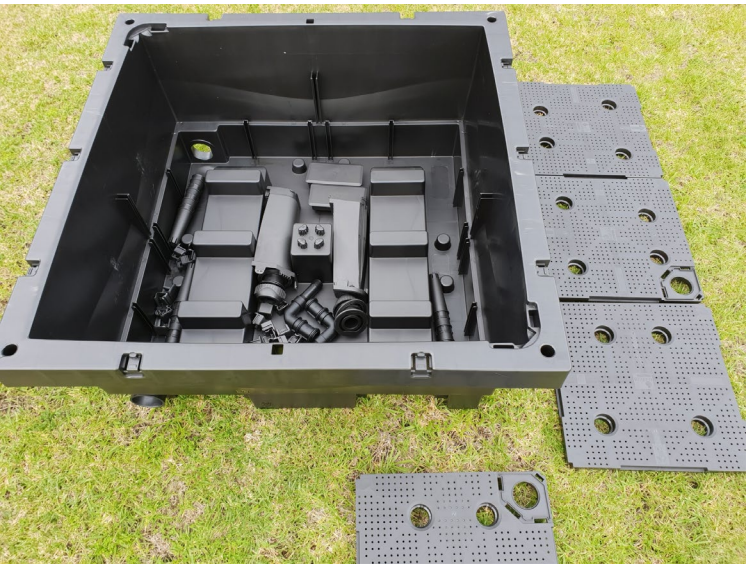
- Self watering technology is appropriate
- Phase 1 Foodwall achieved results at the home scale
- Home scale demand exists
- Shade is necessary for hot periods
- Education on ground is very important
- Access to quality compost critical
- Heat build-up in planters can be an issue
- Perception is everything
- Get good partners
- Opportunity for larger scale requires different approach - Foodcube

Scaling Up

$6 Million invested by two local companies

Recycled food grade chip packet film destined for landfill

No packaging or waste in this product – not even a pallet



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Home Farms

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Rooftop Farms

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