Weathering the Perfect Storm

Transforming cities into water catchments and urban farms

2019
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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
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
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% dependent on roof water for everything!

Many water tanks have been installed to collect rain water – 3,000mm pa falls on Funafuti
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.
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.
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
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
Harvested and replanted Week 4
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
Key Learnings
Tuvalu has resources
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
Home Farms
Rooftop Farms
Rooftop Farms
School Farms
Lets turn our cities into water catchments and urban farms to weather the perfect storm.