Planetary Health Diet.
Why venture is excited
Phil Morle (Partner)

Waves
Inevitable, unstoppable forces

When they come, which companies will need to be paid? Who is running into the wave?
Science has transformed food production … but it has also come at a cost.

1961-2000
- Population increased **98%**
- Food production increased **146%**
- Yields more than **doubled**
- Arable land in use rose **8%**
- Agricultural inputs rose
  - Nitrogen fertilizer (x7)
  - Phosphate fertilizer (x3)
  - Irrigation water (x2)

The Science of Food Security - Goa, August

---

Food production occupies **40%** of land, causes **30%** greenhouse gas, uses **70%** of water.

**Crossed**
- Climate change
- Biosphere integrity
- Biogeochemical flows (nitrogen, phosphorous)

**Will Cross**
- Freshwater
- Change in land use
- Ocean acidification

Regulatory functions upon which human populations depend.
Keep eating meat, keep growing, get richer...

Environmental pressure across all planetary boundaries will be breached.

Meat production will be a major part of that.

Options for keeping the food system within environmental limits. Springmann et al 2018

---

Planetary Option Space - What is possible?

Options for solutions that startups can and are building combine diet change, tech optimisations and waste reduction.

Options for keeping the food system within environmental limits. Springmann et al 2018
The same system is also making us sick through diet and this is going to get worse.

2b overweight or obese

2x diabetes in last 30 years

11.6m avoidable deaths annually

Current Diets vs Planetary Health Diet

Global

Health boundary

CSIRO INNOVATION FUND L.P.
Hacking Health
Health by stealth

Less animal protein + more plant protein in one mouthful.

So, here is the wave. By 2050, Planet Earth needs to...

- Produce 71% more food
- Eat 87% less meat + other dramatic diet shifts
- Have 55% less environmental impact
Double digit follow-on funding began 2 years ago (Agfunder)

Diet
Some companies
Impossible Foods
Plant-based meat

Signals

Valuation: $1b
Raised: $477m

Pull

Health by stealth. Less meat, more plants in diet.
Soylent
Functional Food. Meal Replacement

Signals

Valuation: $430.9m
Raised: $71.5m

Pull

Health by design.

Motif Ingredients
Ingredients for plant based food through fermentation

Signals

90m Series A! Spin out of Ginkgo Bioworks. Ex president of R&D at Pepsico

Pull

Industries making alternatives to meat need base ingredients.
Interesting!

Solar Foods in Finland is making protein from CO2.

Bolt Threads
Bioengineered textiles inc. artificial leather and spider silk.

Signals

213m capital raised.

Pull

Textiles industry unsustainable use of water. Microfibres in oceans.
Goterra
Insects for animal feed from waste

Pull
More sustainable feed + contribution to the waste problem.
‘More’ not ‘Instead’

Traceability more important … and harder
The story as important as the science

Star Trek meets paddock. New skills. Innovate
Exponential not linear

phil@mseq.vc