

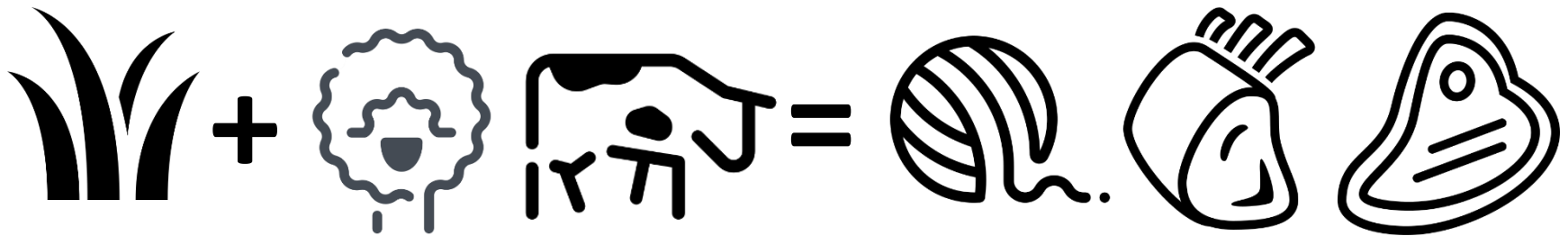
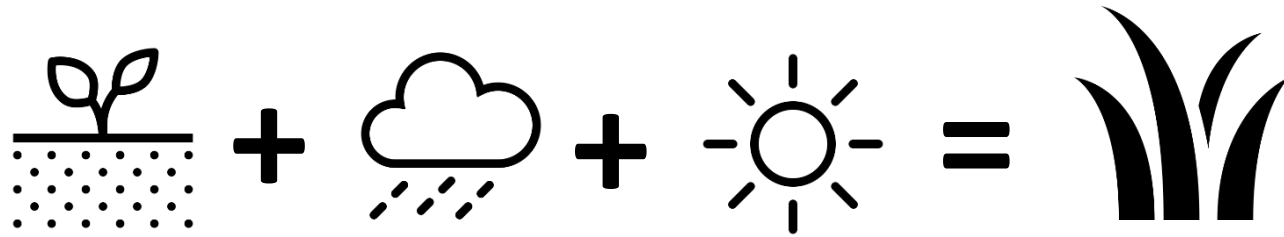
Adopting new technologies for precision livestock farming - an Australian perspective

Hugh Nivison



**Agricultural Business
Research Institute**

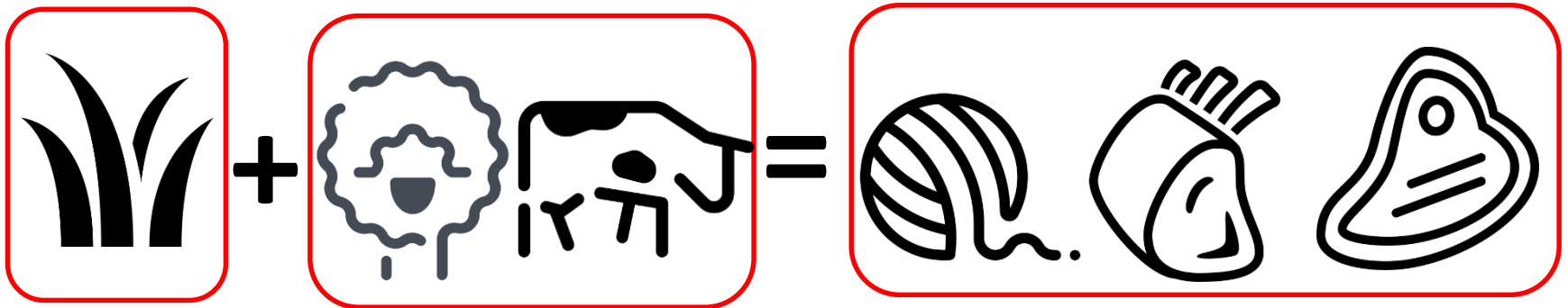
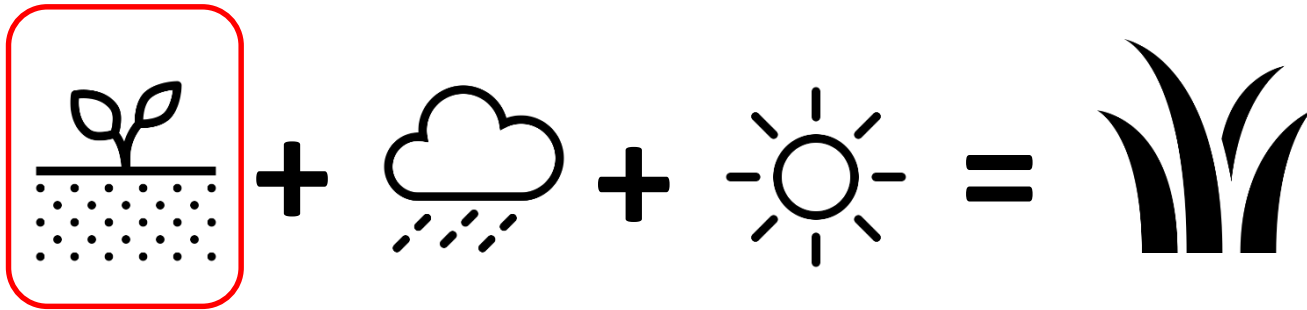
The Basic Equations



\$\$ = income – expenses



The Basic Equations



$$\$ \$ = \text{income} - \text{expenses}$$



The 80:20 Rule (probably 95:5)

- Do the basics well
 - Fertile soil
 - Healthy pasture
 - Happy animals
- ONLY THEN
 - Leading Edge
 - Bleeding Edge





SOIL & FARM & PASTURE

- Carwoola
- Connectivity
- Weeds



Carwoola Pastoral Company

The most digitally connected farms in Australia



Darren Price - General Manager

Four properties under management

Carwoola

- 1,920 Ha
- 500 cattle
- 5,000 sheep

Brooklands

- 2,500 Ha
- 680 cattle
- 8,000 sheep

Taliesin

- 1,260 Ha
- 400 cattle

Clouds

- 350 Ha
- 120 cattle

- Properties are situated east of Canberra and north of Yass NSW.
- Self replacing Angus herd 900 breeders:- feeder trade/re-stocker markets.
- First Cross ewe flock 10,000 ewes:- 4000 lambs to domestic trade/ store lamb markets.
- Winter fodder crops and centre pivot irrigation.
- Small fulltime staff of 4. Utilise contract labour for specific tasks.
- Topography ranges from river flats to steep hills - 720m to 1250m.
- 700mm rainfall. Frost free period 4.5 months per annum.

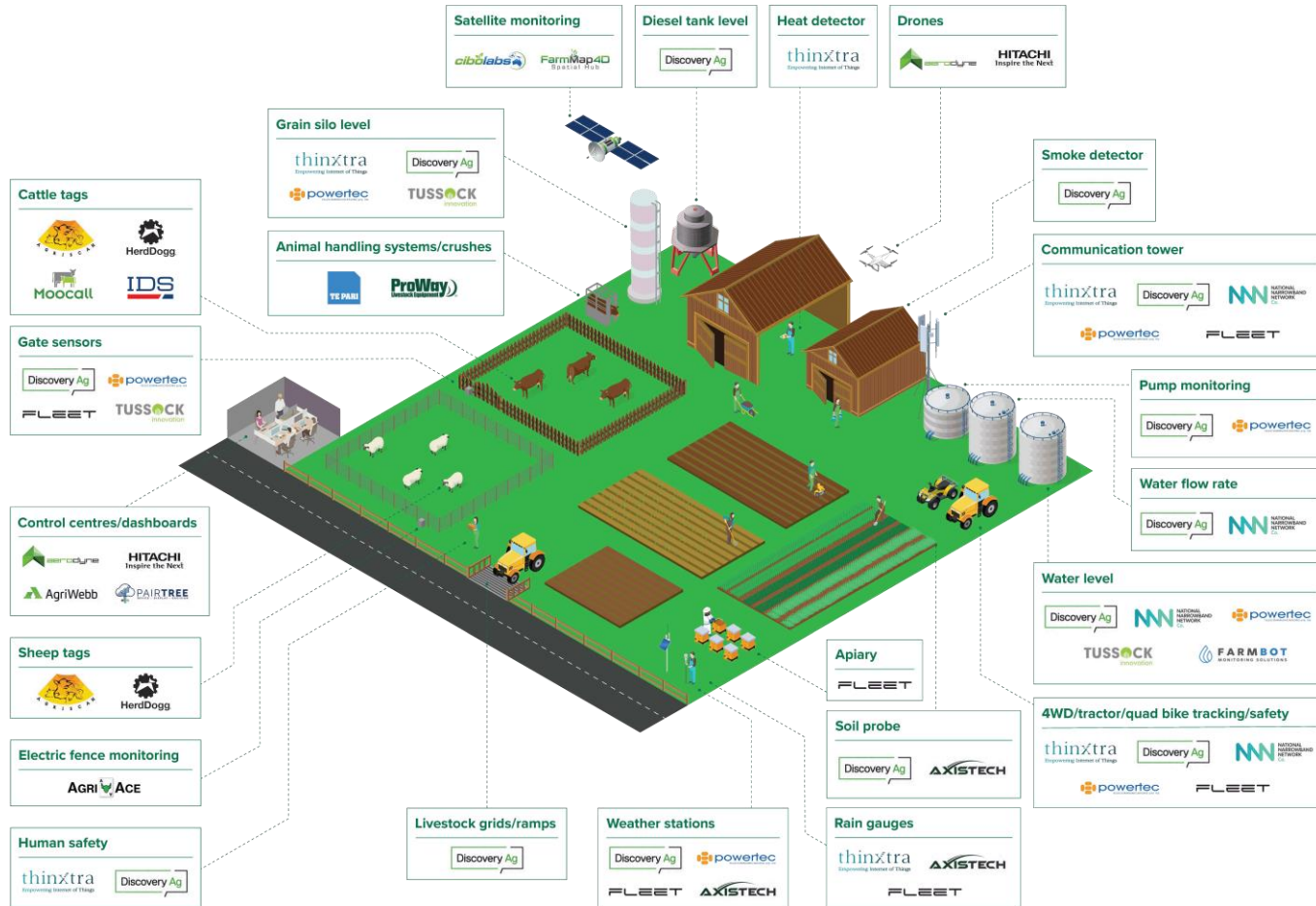
Who Came along

- 150+ global solution providers asked by MLA to get involved.



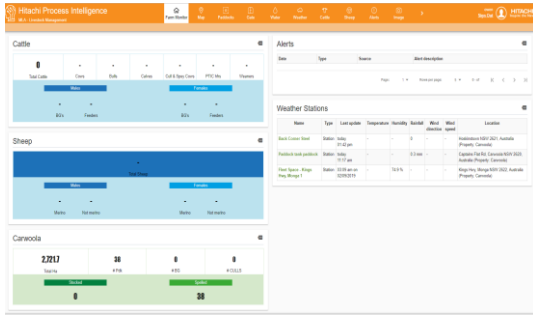
- 20 showed up and have installed (some showed up and abandoned ship).
- Some providers have delivered all that they said they would/ could.
- Providers of the same solutions were installed side by side.

Install Base – 280 individual devices

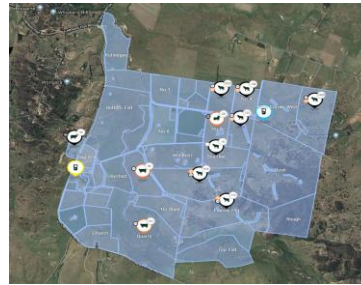


Providers working together – sharing data (a must)

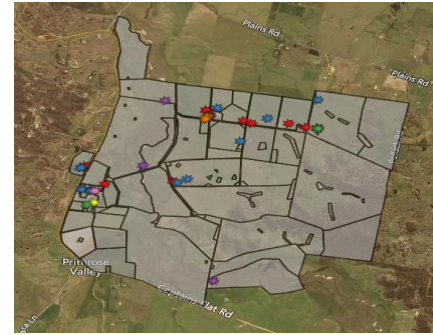
Widget Dashboards



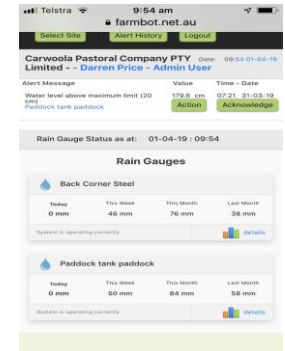
Hitachi



AgriWebb



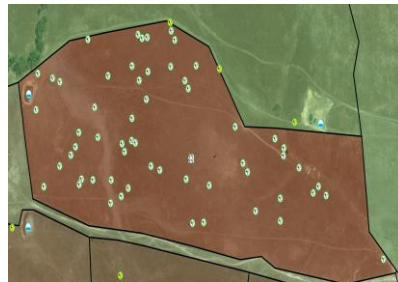
PairTree



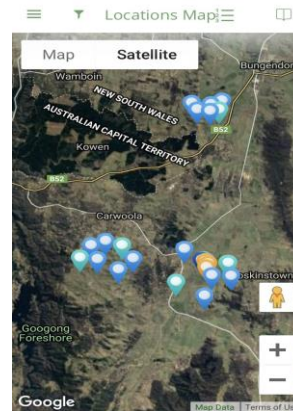
Farmbot



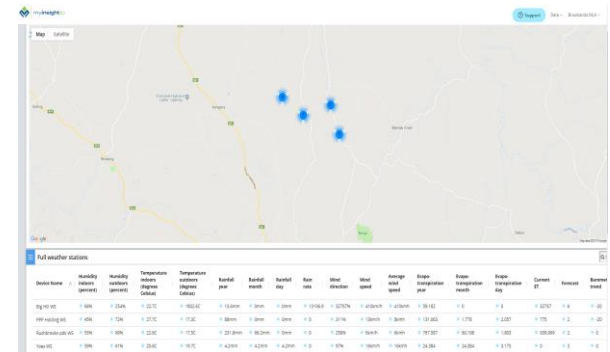
Tussock



IDS Australasia



DiscoveryAg

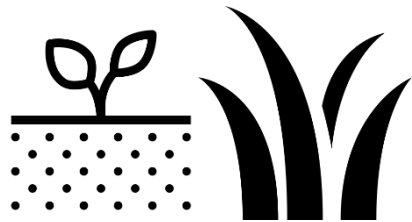


Powertec

Visions for the Future

We are finding the systems we continue to read about in the media.....such as.....

- Walk over weighing systems.
- Really smart sheep and cattle tags.
- Virtual fencing systems for both cattle and sheep.
- Livestock treatment applications such as digital dosing guns and “on the spot” Fecal Egg Count (FEC) processing.
- Advanced irrigation solutions.
- High level reporting and analysis platforms.
- Electric Vehicles.
- Augmented reality and Drone technology for all areas of the farm.
- Linking it all together.



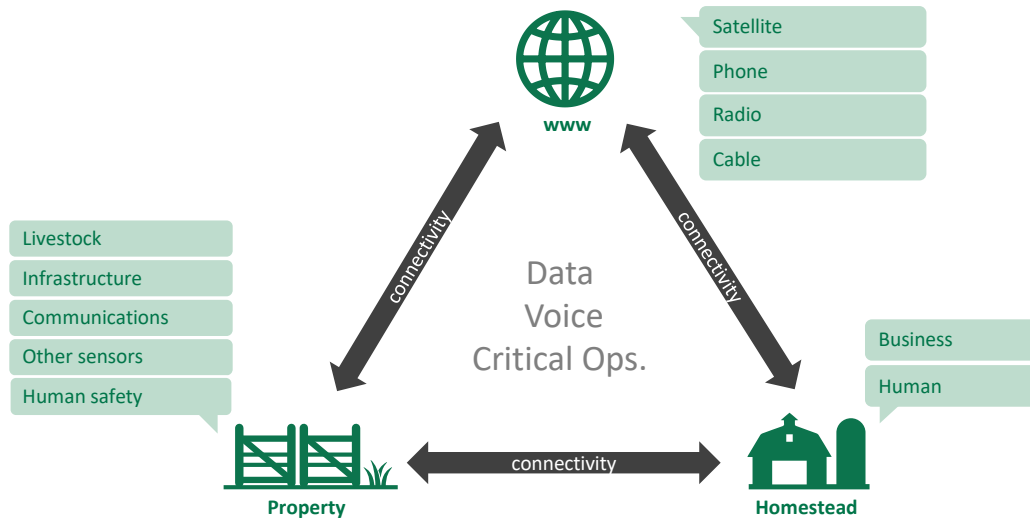
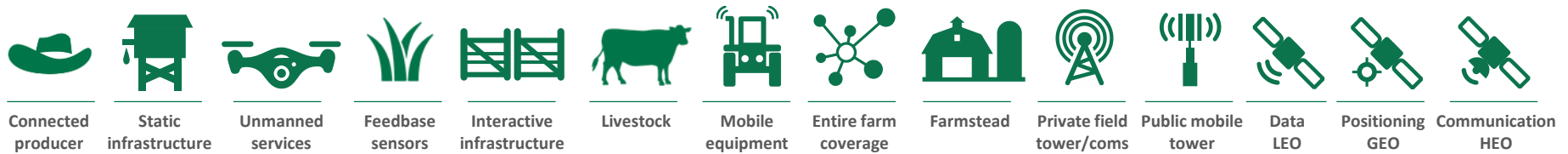
SOIL & FARM & PASTURE

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- Weeds



Connectivity

Innovations on the horizon





SOIL & FARM & PASTURE

- Carwoola
- Connectivity
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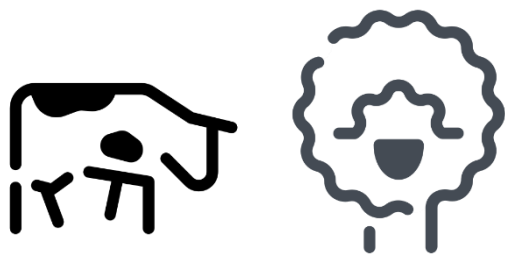




Weed Area

0.00m²





LIVESTOCK

- Genetics
- Health
- Monitoring & movement



Live animal RGBD camera application

- Red, Green, Blue, + Depth (RGBD) camera technology
- Condition score
- Muscle score



Advanced measurements (Quality and Health)

Equine CT

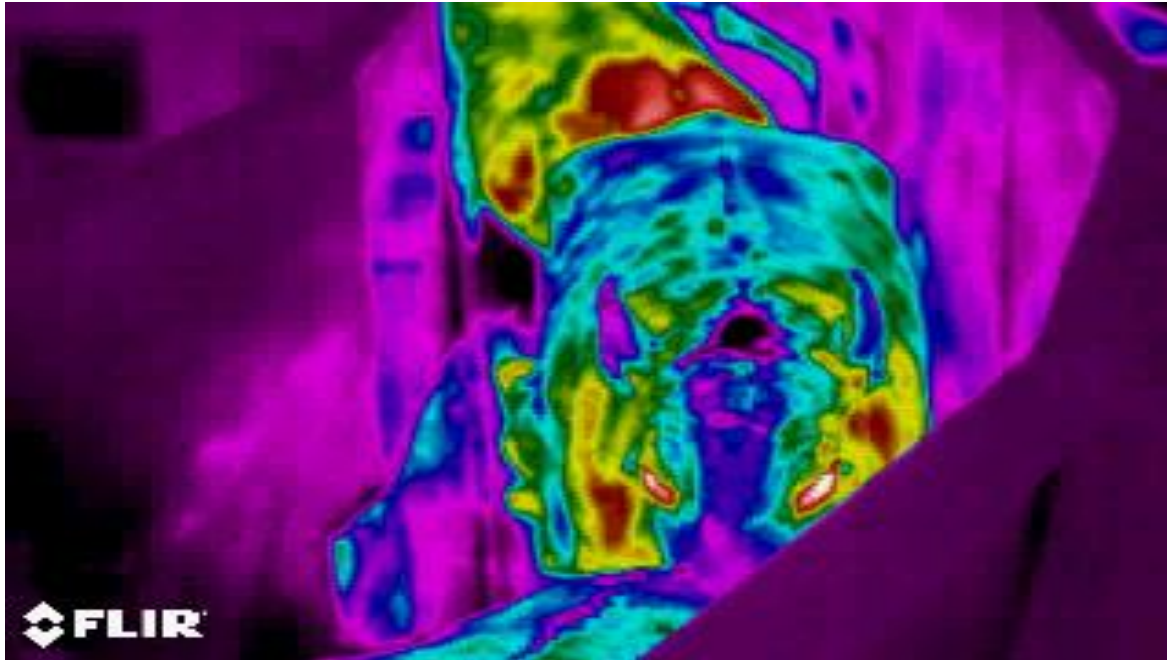


This Siemens CT scanner is equipped with a large animal positioning and CT scanning table.

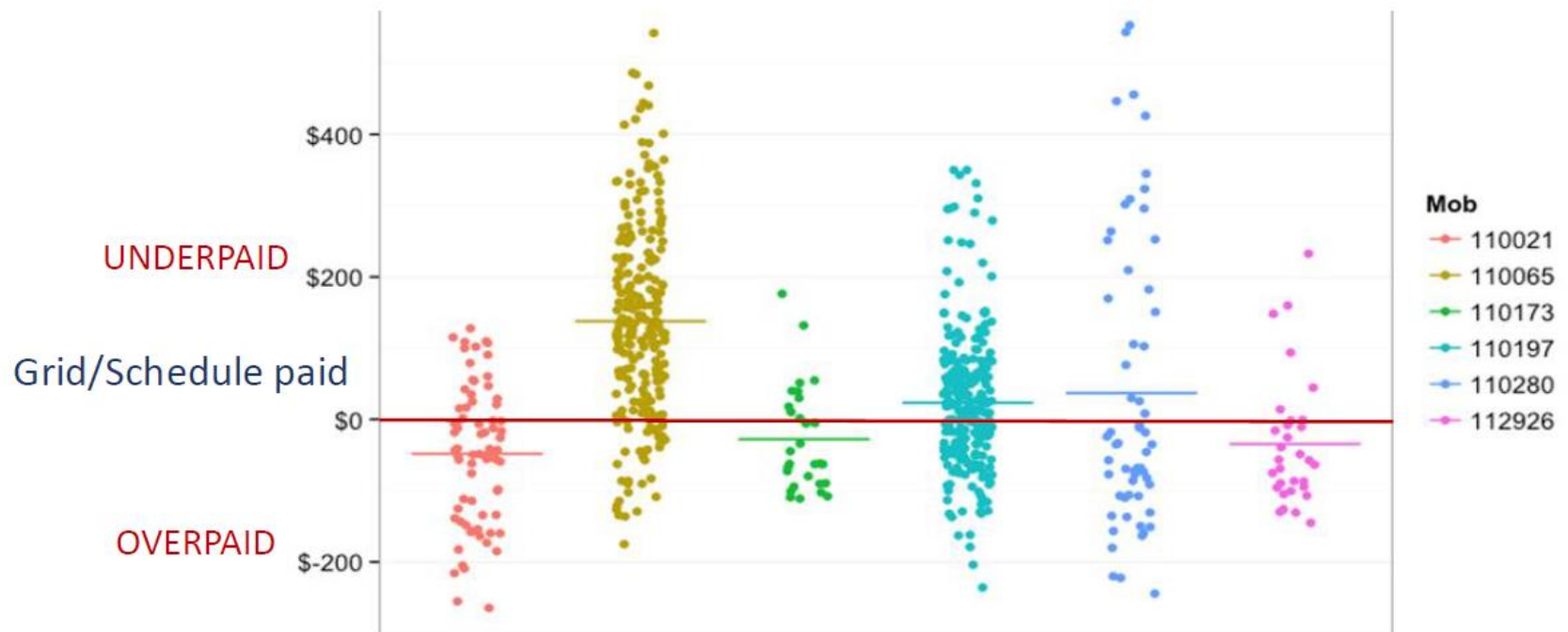
Innovations on the horizon

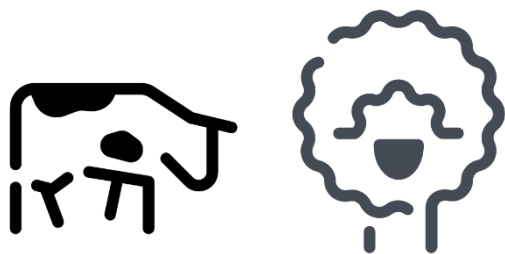


Infra-red thermography



Variation in value - vendor bred & finished steers





LIVESTOCK

- Genetics
- Health
- Monitoring & movement





Cows detected:

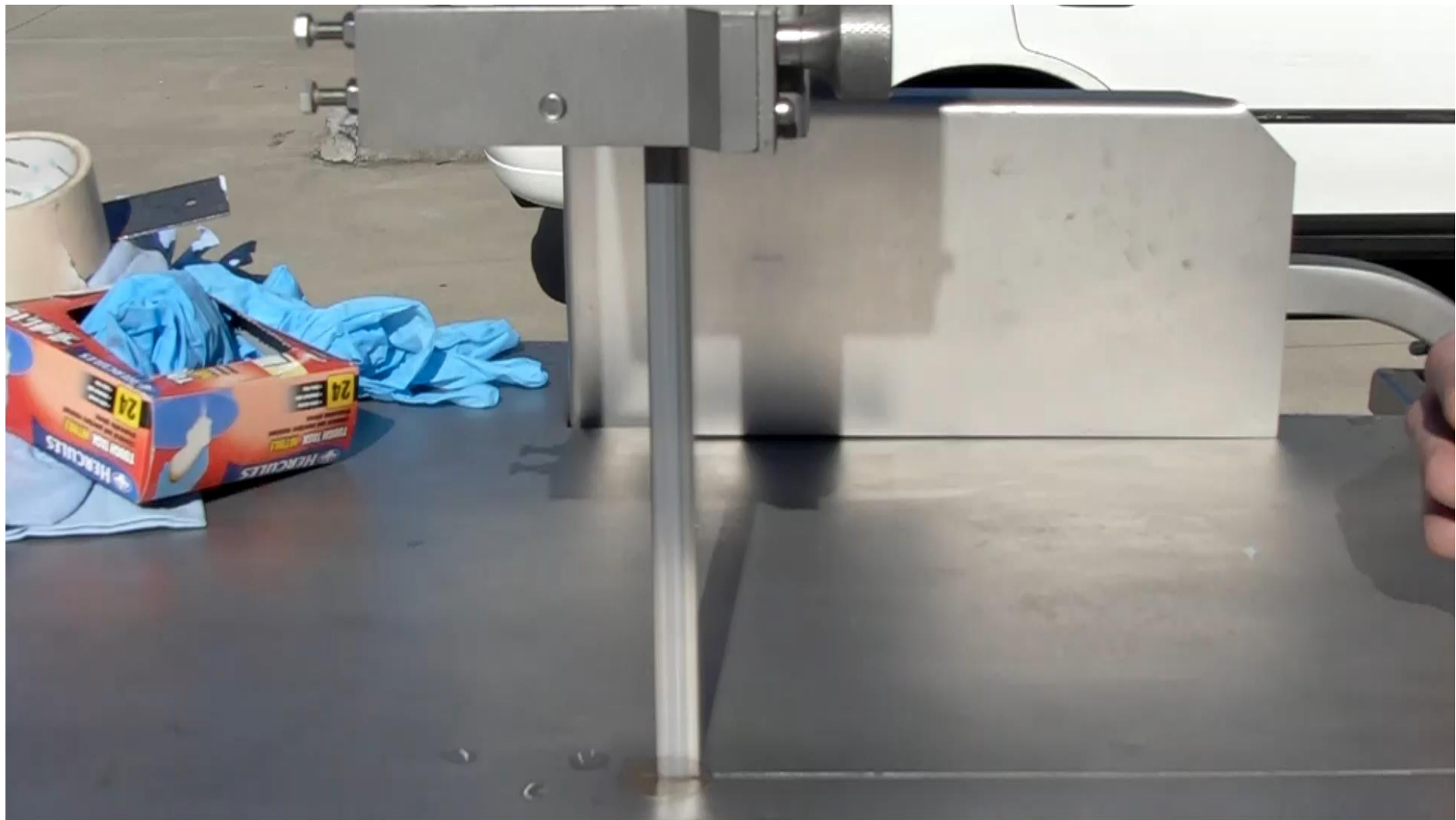




PROCESSING & PRODUCT

- BladeStop
- DEXA & robots
 - same number of staff
 - \$6/hd increased profit
 - 2 year payback



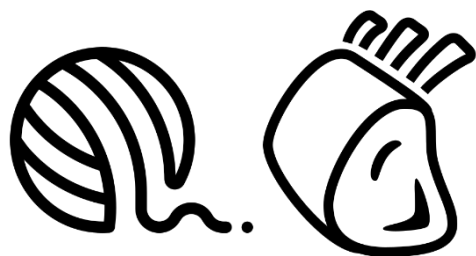






**DONOR
COMPANY**





PROCESSING & PRODUCT

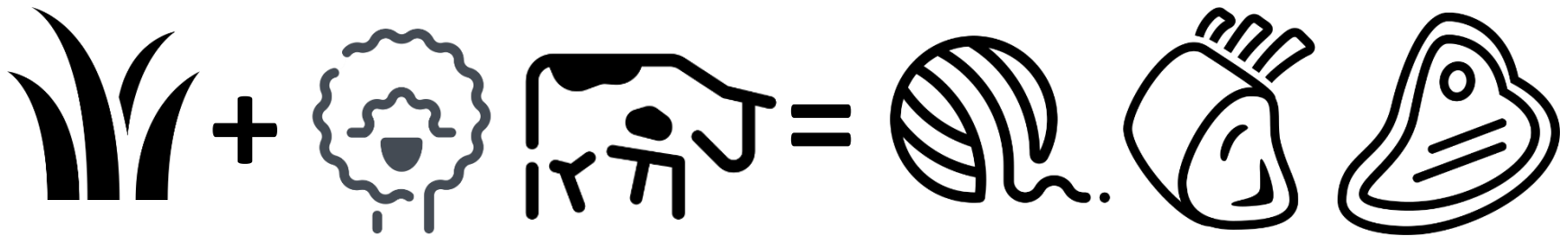
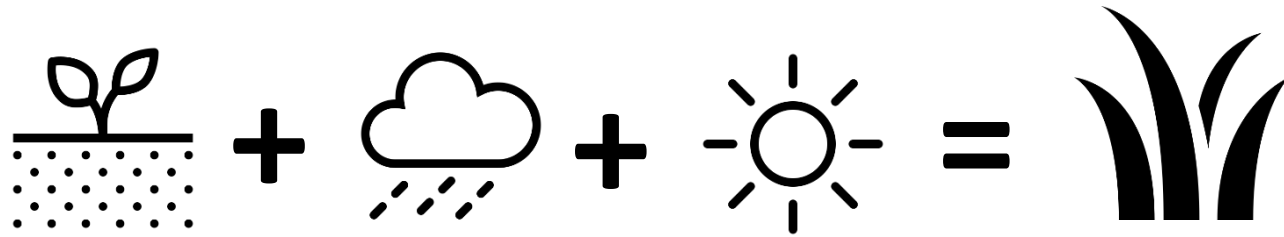
- Shearing Shed Design
- Robotic Shearing
- New products





AGRICULTURAL BUSINESS RESEARCH INSTITUTE

The Basic Equations



\$\$ = income – expenses



QUESTIONS & DISCUSSION

