ACCELERATING PRECISION AGRICULTURE TO DECISION AGRICULTURE

Enabling digital agriculture in Australia
Digital agriculture in Australia is in an immature state in many parts including strategy, culture, governance, technology, data, analytics, and training. This is to the detriment of innovation and producer adoption of digital agriculture in Australia.

With maturity, the economic modelling identified that the implementation of digital agriculture across all Australian production sectors (as represented by the 15 RDCs) could lift the gross value of agricultural (including forestry, and fisheries and aquaculture) production by $20.3 billion (a 25% increase on 2014-15 levels).

To achieve maturity, cross-industry and cross-sector collaboration is vital as many of the issues impeding maturity are common and this scale of investment is required to implement solutions for Australian conditions and to keep pace with the rest of the world.
Unconstrained digital agriculture will deliver $ to producers

Estimated potential increase in gross value of production (GVP) by agriculture:
$20.3 billion (25% increase on 2014-15 levels)

Overall potentially increasing National GDP by:
$24.6 billion (a 1.5% increase on 2014-15 levels)

Estimated potential GVP impacts from industries working together:

- Automation and labour savings $7.4B (e.g. machinery, animal handling & product processing)
- Genetic gains through objective data $2.9B (e.g. animal & variety selection)
- Tailoring inputs to need $2.3B (e.g. fertiliser seed, & water)
- Market access and biosecurity $1B (e.g. pest & disease control)

GVP Increase (%):

<table>
<thead>
<tr>
<th>Sector</th>
<th>GVP Increase (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rice</td>
<td>30</td>
</tr>
<tr>
<td>Grains(^b)</td>
<td>51</td>
</tr>
<tr>
<td>Cotton</td>
<td>28</td>
</tr>
<tr>
<td>Sugar</td>
<td>23</td>
</tr>
<tr>
<td>Horticulture(^c)</td>
<td>40</td>
</tr>
<tr>
<td>Beef</td>
<td>16</td>
</tr>
<tr>
<td>Sheep meat</td>
<td>17</td>
</tr>
<tr>
<td>Wool</td>
<td>18</td>
</tr>
<tr>
<td>Pork</td>
<td>5</td>
</tr>
<tr>
<td>Dairy</td>
<td>15</td>
</tr>
<tr>
<td>Eggs</td>
<td>25</td>
</tr>
<tr>
<td>Chicken meat</td>
<td>24</td>
</tr>
<tr>
<td>Wine</td>
<td>12</td>
</tr>
<tr>
<td>Forest and wood products</td>
<td>37</td>
</tr>
<tr>
<td>Livestock exports</td>
<td>4</td>
</tr>
<tr>
<td>Red meat processing</td>
<td>14</td>
</tr>
<tr>
<td>Fisheries and aquaculture</td>
<td>44</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>25</strong></td>
</tr>
</tbody>
</table>

\(^a\) Including forestry, and fisheries and aquaculture
\(^b\) Gross Value of Production (GVP) measures the actual production output of an establishment or sector.
\(^c\) Including oilseeds and pulses.
\(^d\) Leafy greens, brassicas, and carrots only.
ESTIMATED POTENTIAL GVP IMPACTS FROM INDUSTRIES WORKING TOGETHER

Automation and labour savings $7.4B
  e.g. machinery, animal handling & product processing

Tailoring inputs to need $2.3B
  e.g. fertiliser seed, & water

Genetic gains through objective data $2.9B
  e.g. animal & variety selection

Market access and biosecurity $1B
  e.g. pest & disease control

* Including forestry, and fisheries and aquaculture
* Gross Value of Production (GVP) measures the actual production output of an establishment or sector.
* Including oilseeds and pulses.
* Leafy greens, brassicas, and carrots only.
KEYTAH

Point-to-point links ~20 – 50 km (microwave)
Point-to-point link ~10 – 30 km (microwave)

Optical fibre backhaul

regional point of presence (POP)

local mobile network tower

Point – multipoint access network

Client ‘cell’

Smart energy, data, weather, solar, storage...
Keytah & Richie Bros.: The largest agricultural auction in Australia
4. RECOMMENDATIONS IN BRIEF

1. Develop a Data Management Policy for Australian Digital Agriculture.
2. Develop a voluntary Data Management Code of Practice and a Data Management Certification or Accreditation Scheme.
3. Policy and investment to improve telecommunications to farms and rural businesses.
4. New investment models including public/private investment.
5. RDC’s develop Digital Agriculture Strategy’s and implementation roadmap.
7. Establish, review and refine foundational data sets.
8. Establish a Digital Agriculture Taskforce for Australia (DATA) headed by the Chief Digital Agricultural Officer – to deliver outcomes.
9. Establish a Digital Agriculture Taskforce for Australia Working Group (DATAWG) – to provide guidance.
10. Provide education and capacity building to increase digital literacy in the agricultural sector.
11. Establish baseline patterns of data usage and a national mobile network coverage (data speed and volume) database.
12. Digitise and automate data collection including for regulatory compliance activities.
13. Execute a cross Industry Survey every three years to identify producers’ needs and issues in digital agriculture.
LOTS OF GOOD EXAMPLES
Small Business Digital Taskforce
Any exemplars?

Digital literacy
https://developers.google.com/web/updates/2015/06/checkout-faster-with-autofill
5. NEXT STEPS

All RDCs co-invest in the recommendations with the Australian government.

Support the establishment of the Digital Agriculture Taskforce, Chief Digital Agriculture Officer and Working Group.