A critical review of global vegetable benchmarking*

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*Acknowledgement: This research would not have been possible without the generous financial contribution of Vegetables WA.
Introduction

• ABARES (2019):
  – Australian vegetable production: $3,904 million (2016-17)
  – Australian vegetable exports: $354 million (2016-17)
  – Australian vegetable imports: $1,002 million (2016-17)
  – Carrots & potatoes are Western Australia’s major export
  – Approximately 260 vegetable growers in Western Australia

• DPIRD (2019):
  – The farm gate value of vegetable production in Western Australia was $336 million in 2012

• But a lot more is known about arable and livestock farm performance
Research aim

The aim of this research was to conduct a critical investigation of global vegetables benchmarking initiatives for the development of a new benchmarking system for vegetable production in Western Australia.
Background knowledge

• Farm performance benchmarking is a mature area of knowledge
• The latest literature still encompasses benchmarking around strategic and operational effectiveness in a broad range of industries
• Knowledge has expanded to include assessments of more socially-responsible factors:
  – Environmental consciousness (e.g. Green et al., 2017; Prakash and Mohanty, 2017)
  – Corporate wellness (e.g. Smith, Damron and Melton, 2017)
  – Benchmarking performance of service organisations (e.g. Tasopoulou and Tsiotras, 2017; Wanke, Barsos and Azad, 2017).
Materials & methods

• A structured search strategy to scholarly and industry databases from Curtin University’s Library (such as ProQuest, Scopus, Web of Science and IBISWorld). Searches were performed using terms such as: vegetable* production benchmark*, vegetable* production benchmark* (not oil), vegetable* benchmark*, horticulture* production benchmark*, horticulture* benchmark* and farm* benchmark* data

• Snowballing search strategy was then adopted which proved to be a great deal more effective in targeting the purpose of the present project.
## Results

Financial performance, vegetable-growing farms, Western Australia, 2015–16 to 2017–18 average per farm

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<tbody>
<tr>
<td>Vegetable receipts</td>
<td>$</td>
<td>1,550,200</td>
<td>1,355,900</td>
<td>1,291,000</td>
</tr>
<tr>
<td>Total cash receipts</td>
<td>$</td>
<td>1,734,370</td>
<td>1,574,800</td>
<td>1,508,000</td>
</tr>
<tr>
<td>% cash receipts from vegetables</td>
<td>%</td>
<td>89</td>
<td>86</td>
<td>86</td>
</tr>
<tr>
<td>Total cash costs</td>
<td>$</td>
<td>1,338,950</td>
<td>1,176,600</td>
<td>1,223,000</td>
</tr>
<tr>
<td>Farm cash income</td>
<td>$</td>
<td>395,410</td>
<td>398,300</td>
<td>285,000</td>
</tr>
<tr>
<td>Farm business profit</td>
<td>$</td>
<td>233,040</td>
<td>252,700</td>
<td>137,000</td>
</tr>
<tr>
<td>Rate of return</td>
<td>%</td>
<td>4.4</td>
<td>7.5</td>
<td>4.7</td>
</tr>
<tr>
<td>– excluding capital appreciation</td>
<td>%</td>
<td>3.9</td>
<td>7.9</td>
<td>na</td>
</tr>
<tr>
<td>– including capital appreciation</td>
<td>%</td>
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p Preliminary estimate. y Provisional estimate. na Not available.

Source: ABARES Australian vegetable-growing farms survey
Results

International initiatives:
• Agribenchmark
• FAOSTAT
• Farm Accountancy Data Network (FDAN)
• The UNIVEG Group

Image adapted from: https://geology.com/world/world-map.shtml
Findings

• Data sets are relatively standard:
  – Similarly structured
  – Principally based on gross margin analyses with additional information provided on fixed costs
  – Income/receipts from sales
  – Various fixed and variable costs

• Most benchmarking reports also provide details of yields in different formats.
Findings

• Farm Business Survey (UK)
• Zentrum für Betriebswirtschaft im Gartenbau e.V. (Germany)
• AACREA (Argentina)
• Farm Sustainability Assessment (USA based but collects global data)
• Innovative data sharing platforms
  – The EU’s Farm Accountancy Data Network (FDAN)
  – Farm Digital (The Netherlands)
Conclusions

• There are many farm benchmarking databases with robust data collection methodologies

• Limitations of the research
  – Internet searches limited to English web sites
  – Are the best data locked away in farm consultancies or behind pay walls?

• Consider accessing data from “mega producers”
  – Monterey Mushrooms Inc. (USA): 1.1 million tonnes of mushrooms annually
  – Dole (USA): US$4.5 Billion (2016), 74,300 full-time and seasonal employees, 300 products in 90 countries.
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