Australian Government
Department of Agriculture and Water Resources
ABARES

ABARESdocs test report

An open source document production system

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Research by the Australian Bureau of Agricultural and Resource Economics and Sciences

User guide
2 December 2016

Cataloguing data

Hughes, N. 2016, ABARESdocs test report: An open source document production system ABARES User guide, Canberra, December. CC BY 3.0.

ISSN 666666
ISBN 666666
ABARES project 4666666

Internet

ABARESdocs test report: An open source document production system is available at agriculture.gov.au/abares/publications.

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Acknowledgements

This software system uses the open source document conversion system Pandoc, as well as the Python libraries pandas, matplotlib and tabulate. The chart_builder script has been developed jointly with Orion Sanders and Mihir Gupta.

Contents

Figures
Tables

Tables

Introduction

This document serves as both a user guide and demonstration of 'ABARESdocs' or at least it will if I ever get around to finishing it.

Text

Dot points

- Dot points look like this
    - and also like this
    - and this

Linked statistics

- ABARESdocs allows the author insert in-text references to statistics, linked to an underlying data file. Here are some examples:
    - Winter crop production in Victoria in 2014-15 was 5,531.7 kilotonnes.
    - Summer crop area planted in Queensland in 2015-16 was 1,417.0 '000 Ha.

References

ABARESdocs (via Pandoc) supports citations / referencing linked to Endnote or Bibtex libraries. Here is an example:

Climatic conditions are the single most important factor affecting the productivity of Australian cropping farms (Kokic et al. 2006, Hughes et al. 2011). Australia's climate is highly variable, with lower mean rainfall and higher rainfall variability than other comparable regions (Peel et al. 2004). As a result, Australian agriculture is subject to more revenue volatility than almost any other country in the world (Keogh 2012).

A bibliography is then automatically inserted at the end of the document.

External links

ABARESdocs allows for external references. Check out this cool football team, the Geelong Cats.

Internal links

ABARESdocs also supports internal document links. For example, the Charts section below shows how insert charts with ABARESdocs.

Math

ABARESdocs (via Pandocs) supports mathematical notation using Latex syntax:

To control for the effect of climate on productivity we estimate a regression of the form:

$$Y_{it} = g(Z_{it}, X_{it}, t)$$

where Y_{it} is the farm performance measure (i.e., *TFP* or *W_YIELD*) for farm i in period t, Z_{it} is a vector of farm specific climate variables, X_{it} a vector of farm characteristics and g is an unknown function. Here Z_{it} is a subset of the 60 climate variables defined in section 3 and X_{it} includes *LAT*, *LONG*, *AREA*, *LIVESTOCK*, *AGE*, *IRRIG2*, *FLOOD20*, *FLOOD5* and *FLOOD1_5* (and *W_AREA* in the wheat yield model).

Equation numbering is also supported, check out eq. 1:

$$Y_{it} = g(Z_{it}, X_{it}, t) \tag{1}$$

Charts

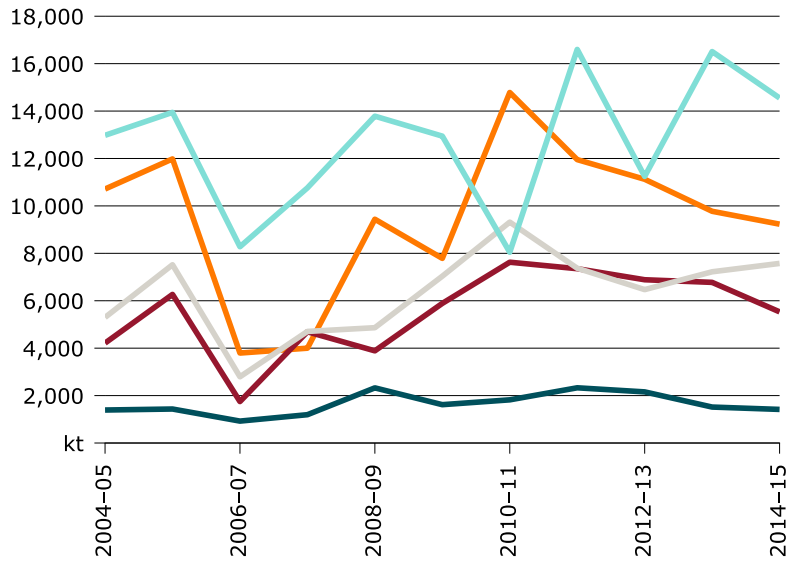
ABARESdocs uses some Python scripts to generate nicely formated chart images. For more information on how this works see the charts folder.

Once chart image files and table text files have been generated they can be inserted as below. Pandoc supports numbering and cross-referencing of tables and charts.

Simple charts

Here is a line chart (Figure 1)

Figure 1: Line chart showing winter crop production in Australia, 2004-05 to 2014-15



Here is an area chart (Figure 2)

Here is a bar chart (Figure 3)

Here is a horizontal bar chart (Figure 4)

Here is a stacked bar chart (Figure 5)

Here is a scatter chart (Figure 6)

Here is a multi-scatter chart (Figure 7)

Combo charts

Here is a line chart with secondary y-axis (Figure 8)

Here is a bar and line chart with secondary y-axis (Figure 9)

Figure 2: Area chart showing winter crop production in Australia, 2004-05 to 2014-15

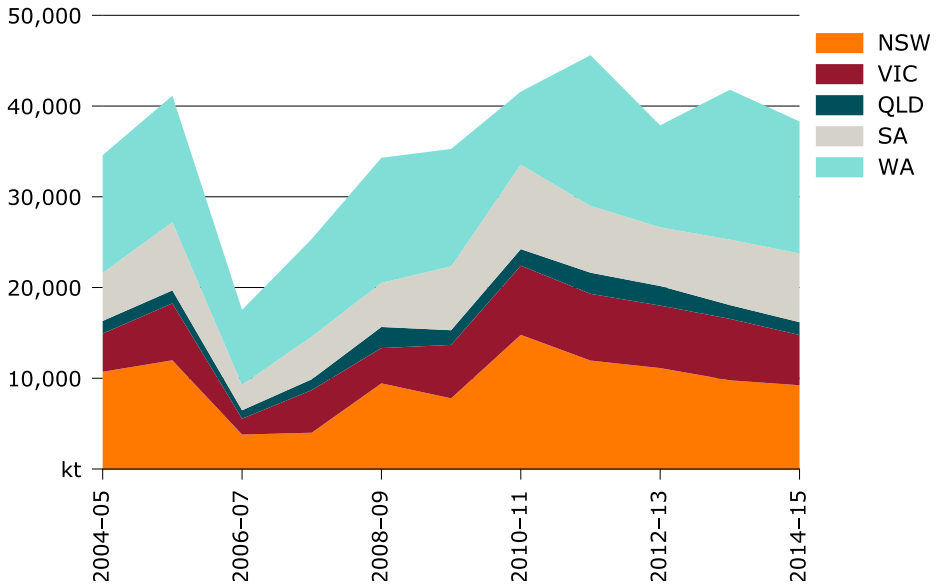


Figure 3: Bar chart showing winter crop production in Australia, 2004-05 to 2014-15

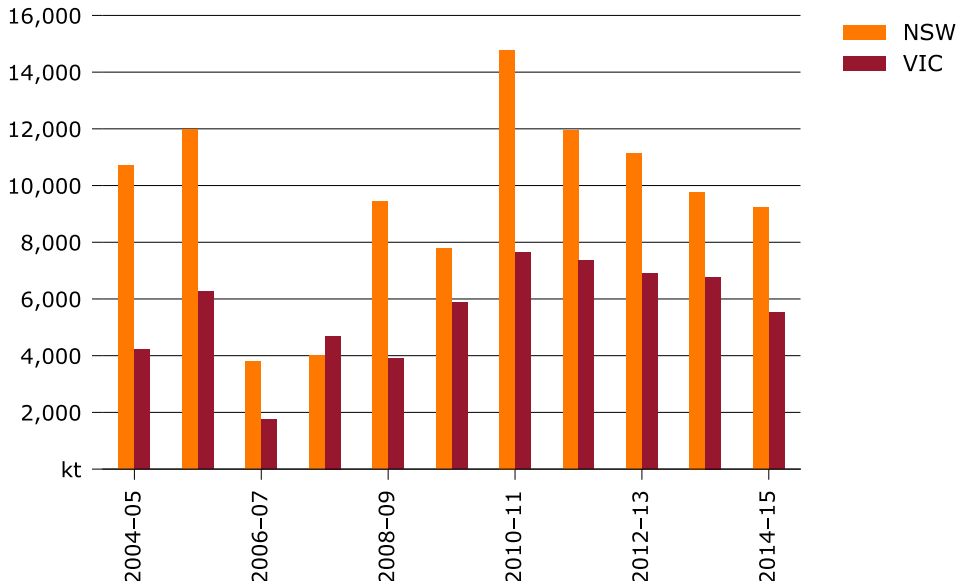


Figure 4: Horizontal Bar chart showing winter crop production in Australia, 2012-13 to 2014-15

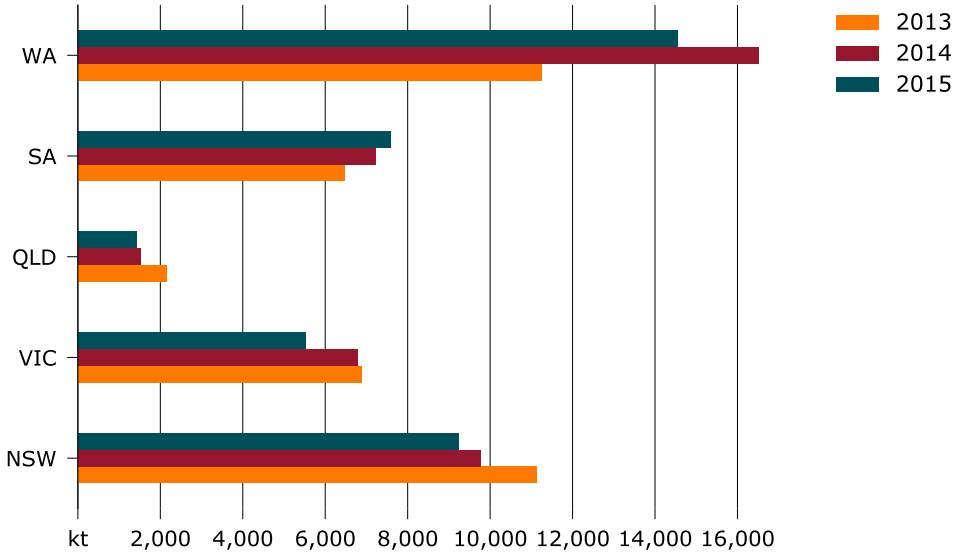


Figure 5: Stacked bar chart showing winter crop production in Australia, 2012-13 to 2014-15

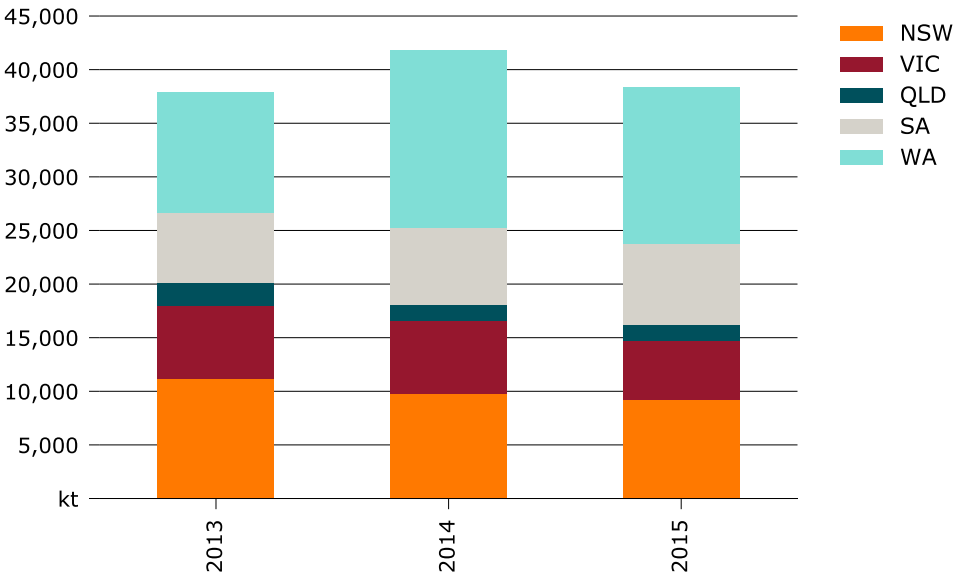


Figure 6: Scatter chart showing winter crop production in Australia against area, 2004-05 to 2014-15

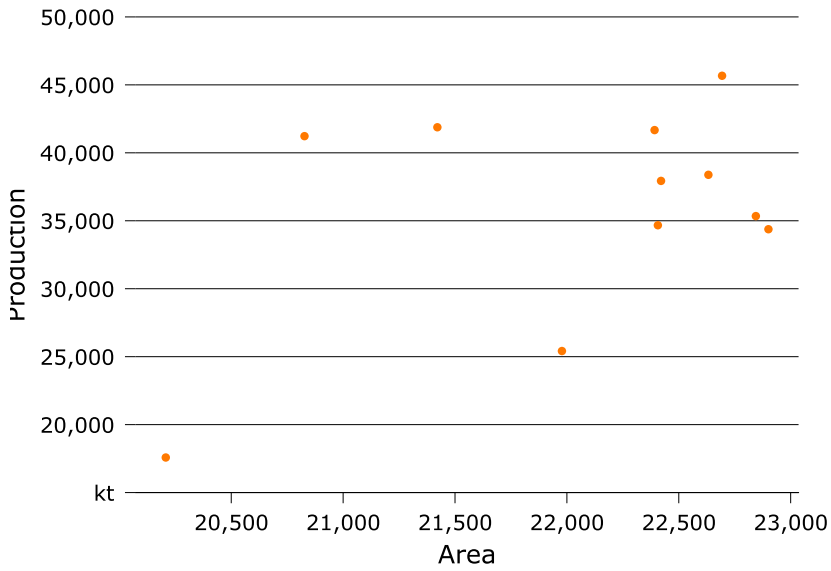


Figure 7: Multi-scatter chart showing winter crop production in Australia against area, 2004-05 to 2014-15

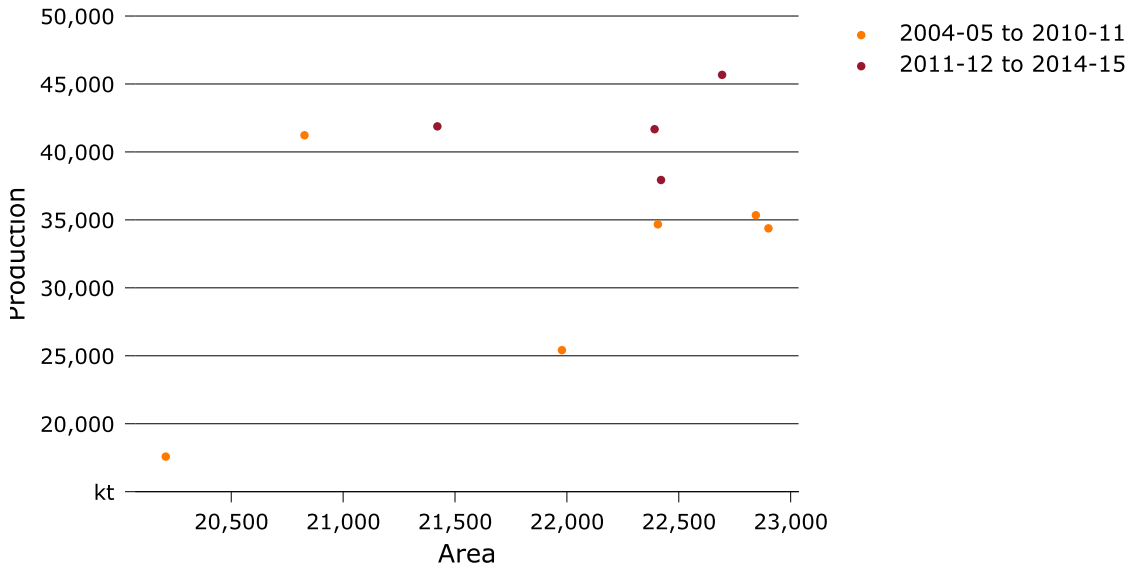


Figure 8: Line chart with secondary y-axis showing winter crop production and area in Australia, 2004-05 to 2014-15

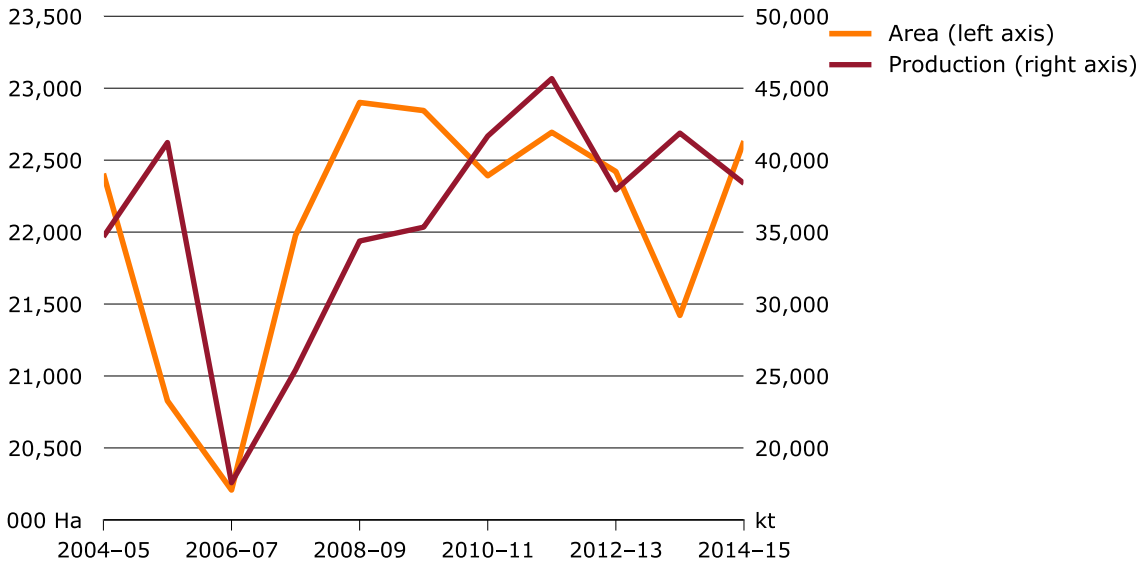
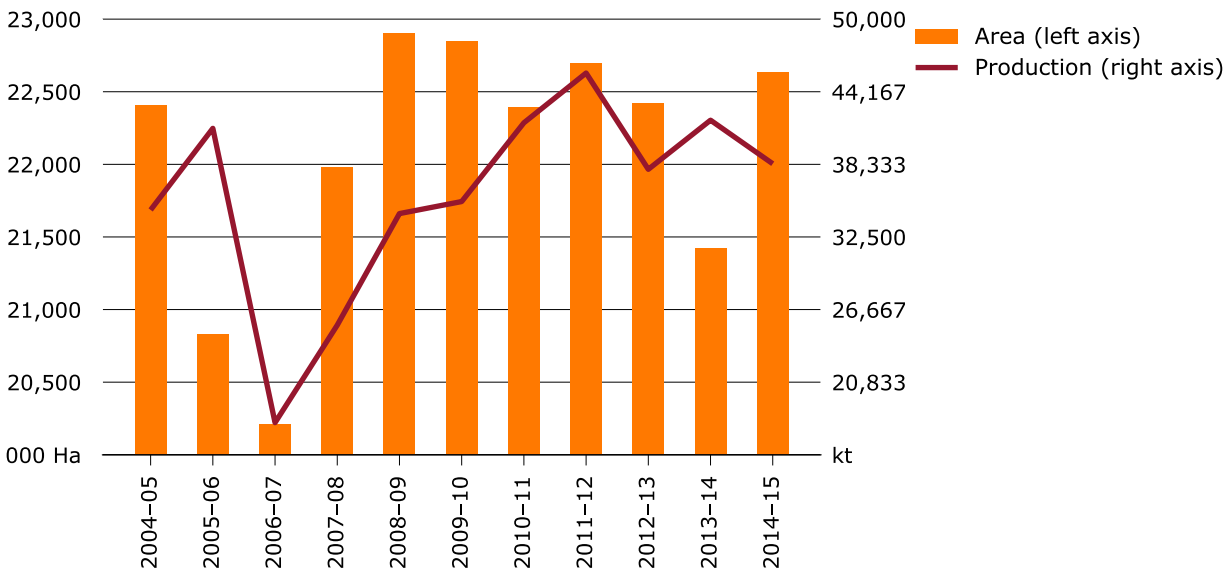
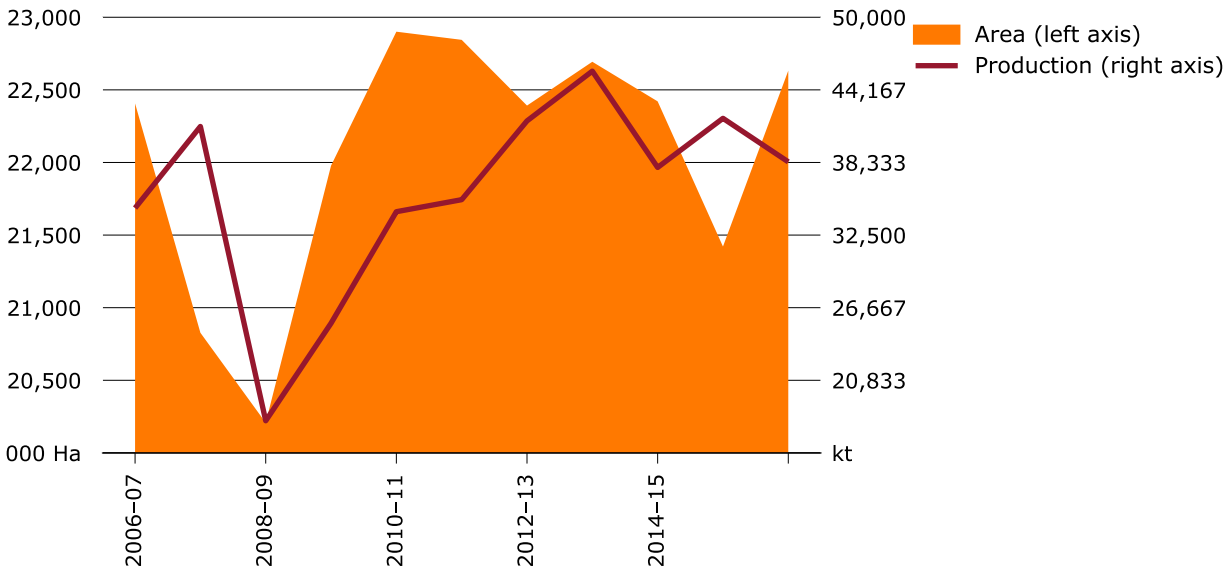


Figure 9: Bar and line chart showing winter crop production and area in Australia, 2004-05 to 2014-15



Here is an area and line chart with secondary y-axis (Figure 10)

Figure 10: Area and line chart showing winter crop production and area in Australia, 2004-05 to 2014-15



Panel charts

Here is a panel line chart (Figure 11)

Here is a panel bar chart (Figure 12)

Here is a multi-panel chart (Figure 13)

Here is a multi-panel bar / line chart (Figure 14)

Figure 11: Panel chart showing winter crop production in Australia, 2004-05 to 2014-15

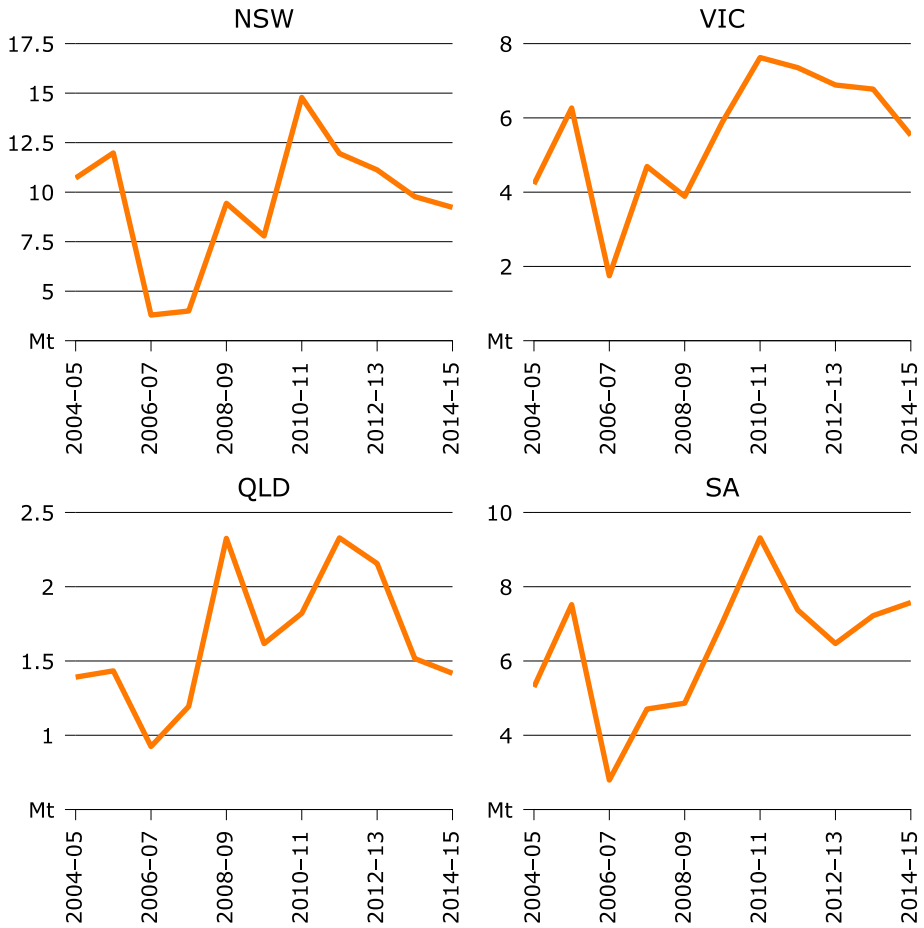


Figure 12: Panel bar chart showing winter crop production in Australia, 2004-05 to 2014-15

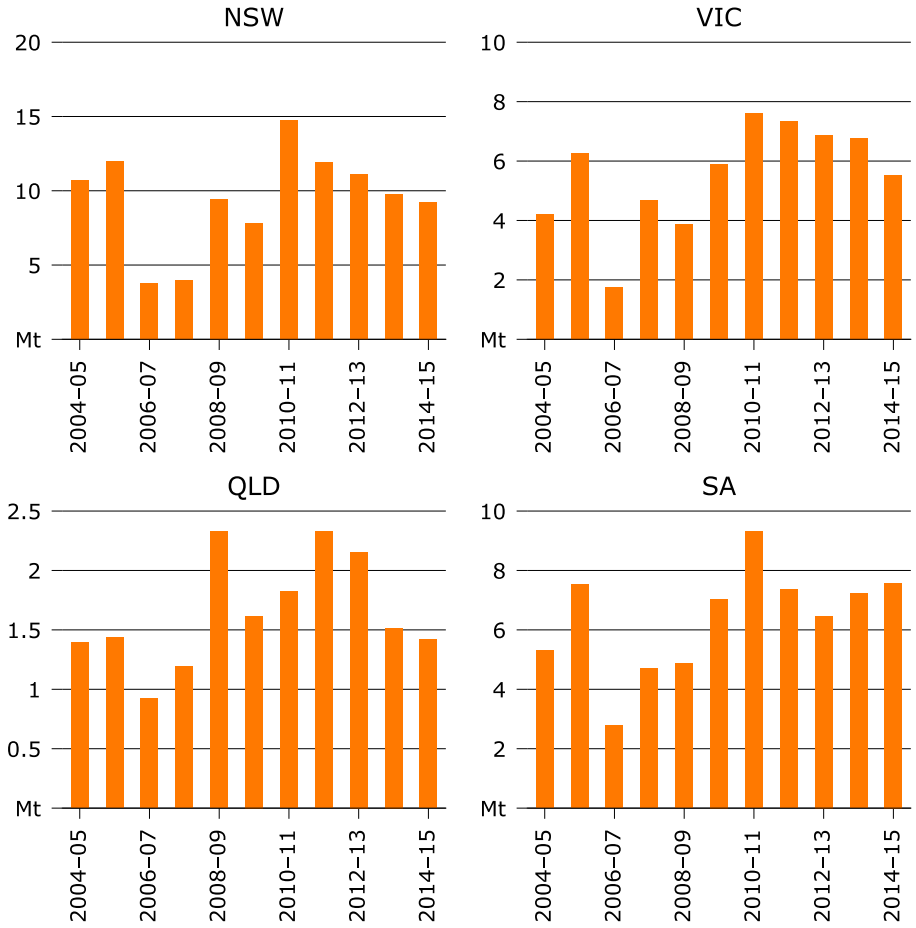


Figure 13: Multi panel chart showing winter crop production and area in Australia, 2004-05 to 2014-15

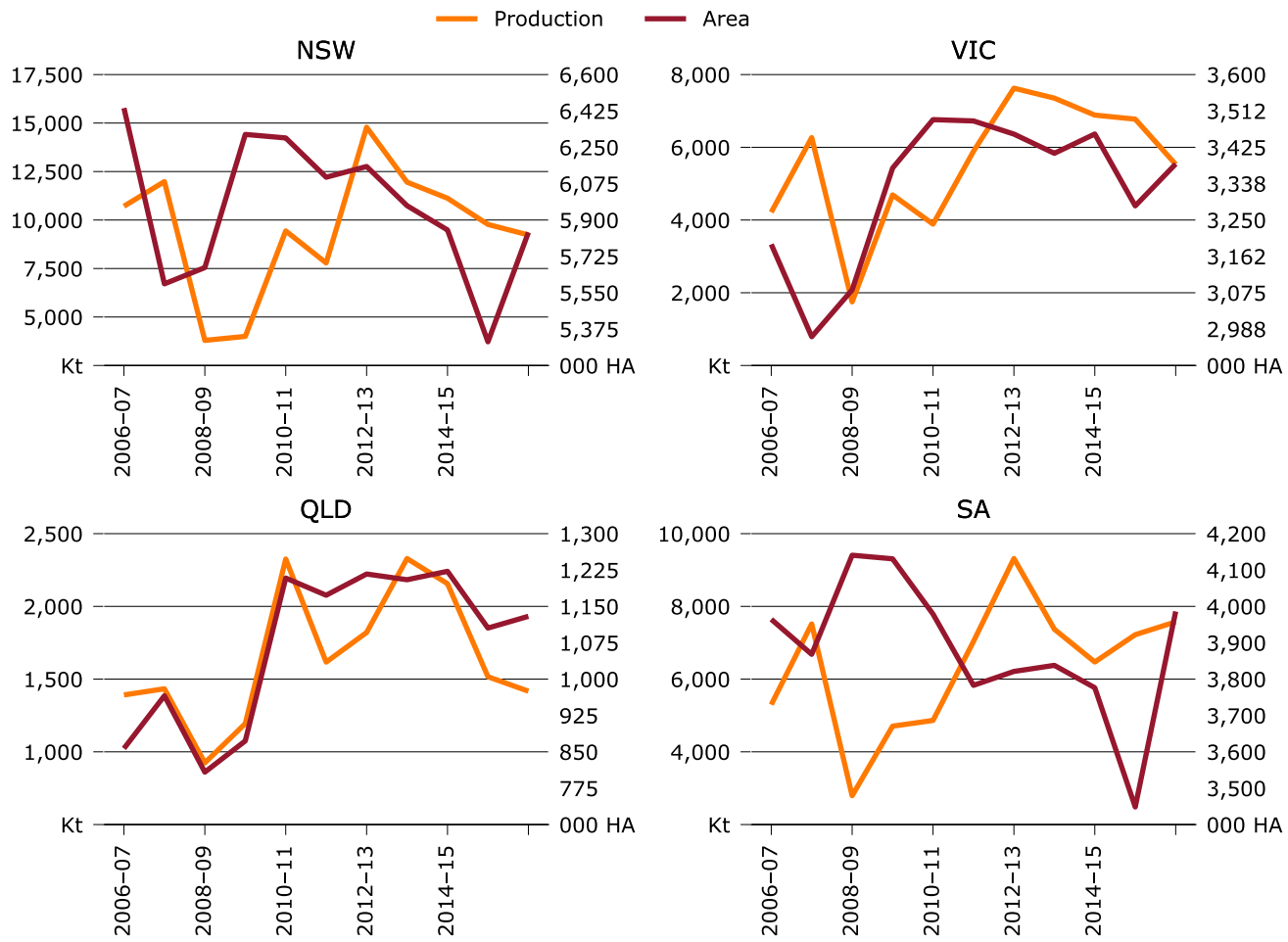
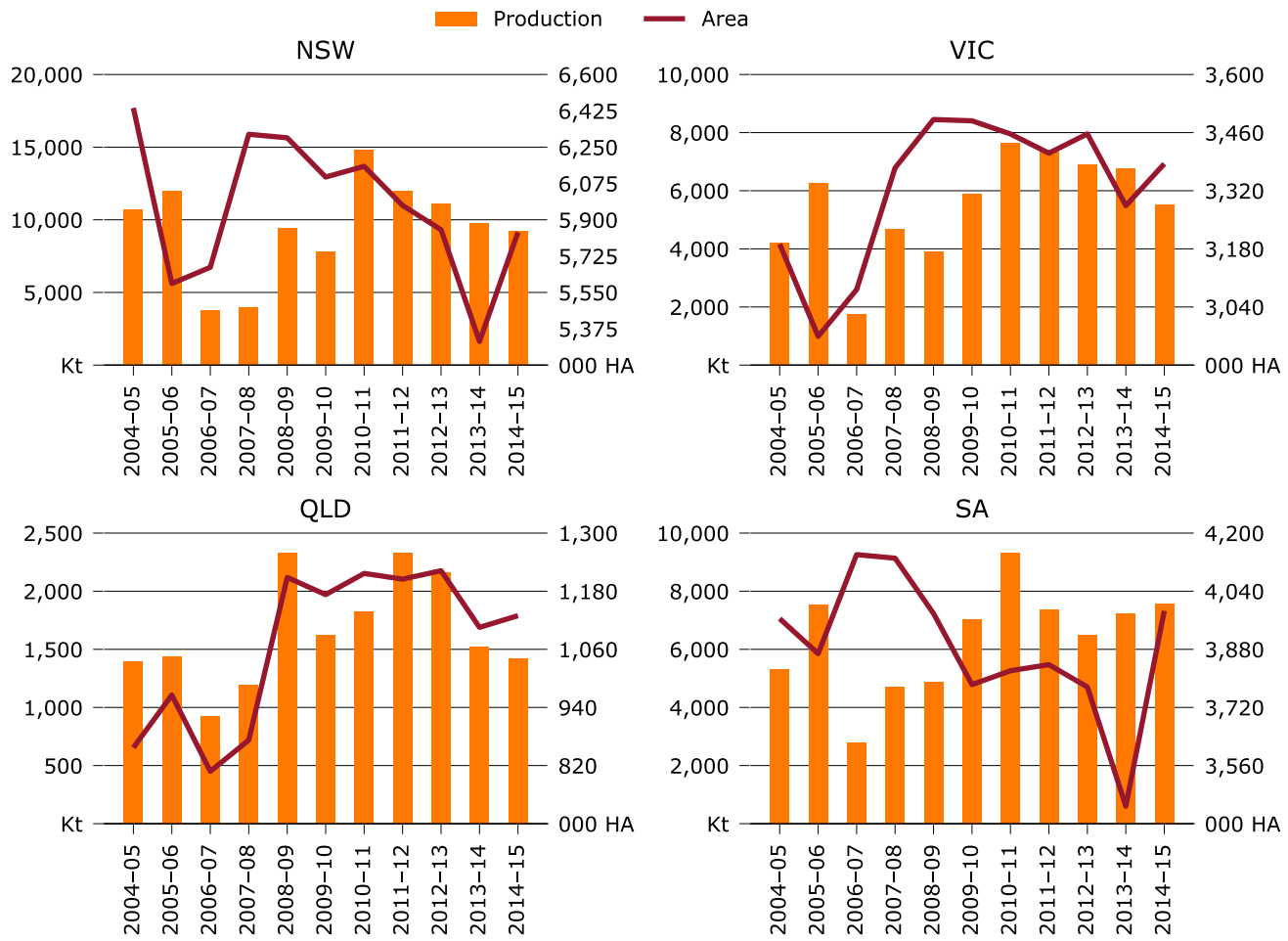


Figure 14: Multi panel bar/line chart showing winter crop production and area in Australia, 2004-05 to 2014-15



Tables

ABARESdocs allows report tables to be linked to csv files. Here are some examples (Table 1, Table 2).

Table 1: winter crop production in Australia, 2004-05 to 2014-15

	NSW	VIC	QLD	SA	WA
2005	10,712.2	4,214.4	1,391.2	5,297.5	12,977.8
2006	11,981.3	6,266.8	1,433.4	7,517.9	13,944.6
2007	3,794.1	1,747.9	924.2	2,793.1	8,278.1
2008	3,999.2	4,691.7	1,194.1	4,705.7	10,760.5
2009	9,438.4	3,887.4	2,325.6	4,863.4	13,784.6
2010	7,787.0	5,889.1	1,616.9	7,035.5	12,943.0
2011	14,783.6	7,625.2	1,820.6	9,316.1	8,044.1
2012	11,952.1	7,352.0	2,328.7	7,371.5	16,600.0
2013	11,123.4	6,885.6	2,156.0	6,469.7	11,243.1
2014	9,773.0	6,774.6	1,516.2	7,221.3	16,509.8
2015	9,230.0	5,531.7	1,417.0	7,574.4	14,550.7

Table 2: winter crop area in Australia, 2004-05 to 2014-15

	NSW	VIC	QLD	SA	WA
2005	6,438.8	3,191.5	856.9	3,964.5	7,932.2
2006	5,592.9	2,969.2	965.6	3,868.2	7,406.7
2007	5,671.1	3,081.9	808.1	4,140.7	6,477.2
2008	6,312.0	3,375.0	872.6	4,130.8	7,264.6
2009	6,295.0	3,491.6	1,208.5	3,978.7	7,899.3
2010	6,106.0	3,488.4	1,173.0	3,782.9	8,270.6
2011	6,157.6	3,456.8	1,216.7	3,821.1	7,715.1
2012	5,969.1	3,410.5	1,205.0	3,837.8	8,252.2
2013	5,852.2	3,457.0	1,222.3	3,776.3	8,097.2
2014	5,313.9	3,284.1	1,105.3	3,448.3	8,248.9
2015	5,840.5	3,384.9	1,129.5	3,986.0	8,271.5

You can also insert static tables directly with markdown syntax.

Table 3: Final meta-parameter values

	TFP	W_YIELD
Number of samples per split	50	5
Number of trees	1175	1475
Learning rate	0.045	0.032

Appendix A: Tips and tricks

References

Hughes, N et al. 2011,'Productivity pathways: climate-adjusted production frontiers for the Australian broadacre cropping industry', in, *2011 conference (55th), february 8-11, 2011, melbourne, australia*, Australian Agricultural; Resource Economics Society.

Keogh, M 2012,'Including risk in enterprise decisions in Australia's riskiest businesses', in, *56th annual conference of the australian agricultural and resource economics society, perth, australia*, pp.8–10.

Kokic, P, Davidson, A, & Boero Rodriguez, V 2006, 'Australia's grains industry: factors influencing productivity growth', *Australian Commodities: Forecasts and Issues*, vol. 13, no. 4, p. 705.

Peel, MC, McMahon, TA, & Finlayson, BL 2004, 'Continental differences in the variability of annual runoff-update and reassessment', *Journal of Hydrology*, vol. 295, no. 1, pp. 185–197.