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**PrimeAg Australia 2007-13: A Suitable Structure for Long
Term Investment in Agriculture?**

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1. Introduction

Prime Agriculture Australia Limited (or PrimeAg), 2007–2013, was a listed investor in, and operator of, agricultural properties spread between the Australian States of Queensland (Qld) and New South Wales (NSW). The company was incorporated under Australian Federal *Corporations Law* in August 2007 as an unlisted public company and subsequently listed on the Australian Stock Exchange (ASX) in December 2007 with the security symbol PAG. The initial public offering (IPO) raised \$300M from the sale of 150M shares of \$2 for the purpose of purchasing land and water entitlements to ‘take advantage of the increasing Global Demand for soft commodities’ (PAG, 2007a). PAG envisaged realising this advantage by identifying land suitable to more productively grow a range of substitutable crops. Its aim was to achieve this by employing advanced management and technology, attaining scale economies from within co-located farms (hubs), and from across the whole group, and from the application of some selected capital development, such as irrigation works (see Table 11). These practices would yield superior operating profits and, in time, realisable capital gains which could be used to fund new rounds of land purchases and further development. Eves and Painter (2008) demonstrate that returns superior and uncorrelated to equities markets, with less risk, are possible from agriculture over a 15 year period. PAG operated as a listed entity for six years.

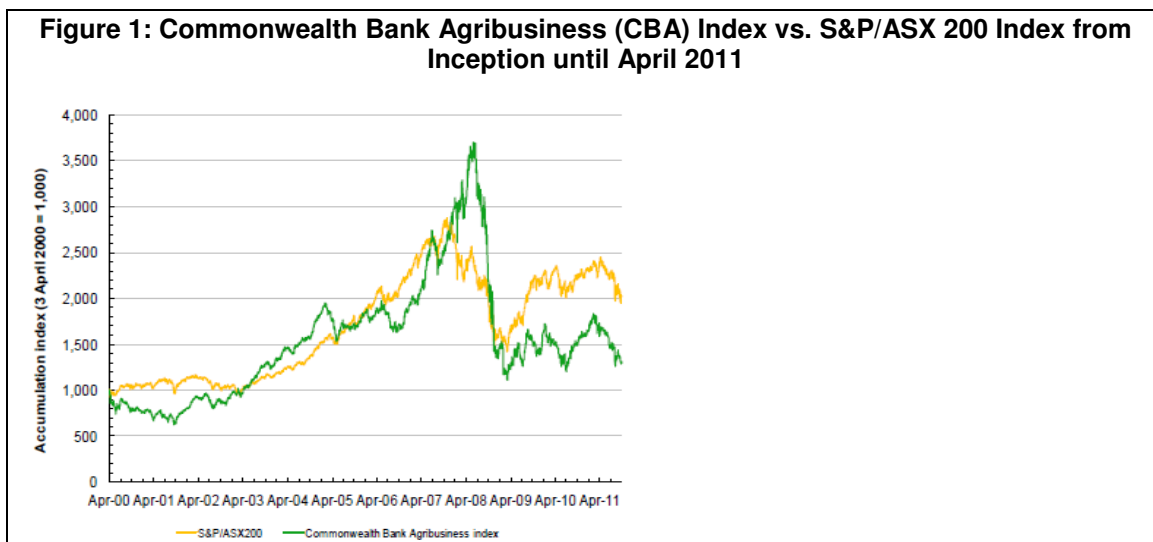
After incorporation and listing costs, the new company had approximately \$285M to invest. By the end of 2007 it had settled the purchase of several properties and was in the process of exercising options to purchase over several more. By the end of financial year 2008, it had \$54M cash remaining. At its maximum in 2011, PAG had ownership of over 11,500 ha of irrigated land, 18,000 ha of dryland property and 68 gicalitres (GL) of water entitlements. Yet by November 2013, PAG was delisted, with its assets sold and its capital returned to shareholders. The company’s shares only briefly traded above Net Asset Value (NAV), which has been a frequent occurrence with listed Australian agricultural stocks.

This paper explores whether this listed entity was a sufficiently suitable fit for investment into the highly volatile agricultural sector by outlining the key major developments in PAG’s six-year history. The rest of the paper is organised into four sections around background on the rural land market in Australia, the key documents of the 2007 Prospectus, the 2011 Rights Issue and the 2013 Scheme of Arrangement.

2. The Rural Land Market in Australia: Drivers and Increasing Corporate Participation

In 2007, stock markets, soft commodities and agricultural land boomed around much of the globe. In Australia, there were a record number of IPOs, in common with other bourses worldwide. Similarly, the year ended with sharp declines in stock values as the Global

Financial Crisis (GFC)¹ began to unfold. Australian agricultural stocks, as measured by the Commonwealth Bank's Agribusiness Index², posted a 37% gain for the year as opposed to a 6% fall in the ASX 200 index³ (Figure 1). The soft commodity boom was driving interest in agricultural investment plays, including stocks and land, and competitive returns were further driving agricultural stocks.



Source: CBA (2011)

The global soft commodities boom was a result of a perceived secular⁴ shift in supply and demand conditions, further fuelled by liquidity-induced financial speculation in commodities with tight supply. These changed conditions included rising demand for protein and grains for livestock feed as a result of increasing incomes across emerging economies; an increasing use of grains for bio-energy production; the loss of arable land in densely populated regions to industrialisation; and weather-related supply constrictions due to increasing occurrences of adverse weather events (Lee, 2008). Collectively, tight food supplies resulted in food security emerging as a major issue for governments in many countries (Figure 2).

Several sets of consequences of investor interest in Australian agriculture became evident in Australian agribusiness markets. The most immediately apparent was an acceleration of levels of international investment into post farm gate agribusiness. The 2011 Australian Bureau of Statistics (ABS) survey indicated the following levels of foreign ownership of Australian agribusiness, as shown in Table 1. Many industry icons, such as AWB Ltd, Dairy Farmers and Proserpine Sugar, became foreign owned in the 2000's.

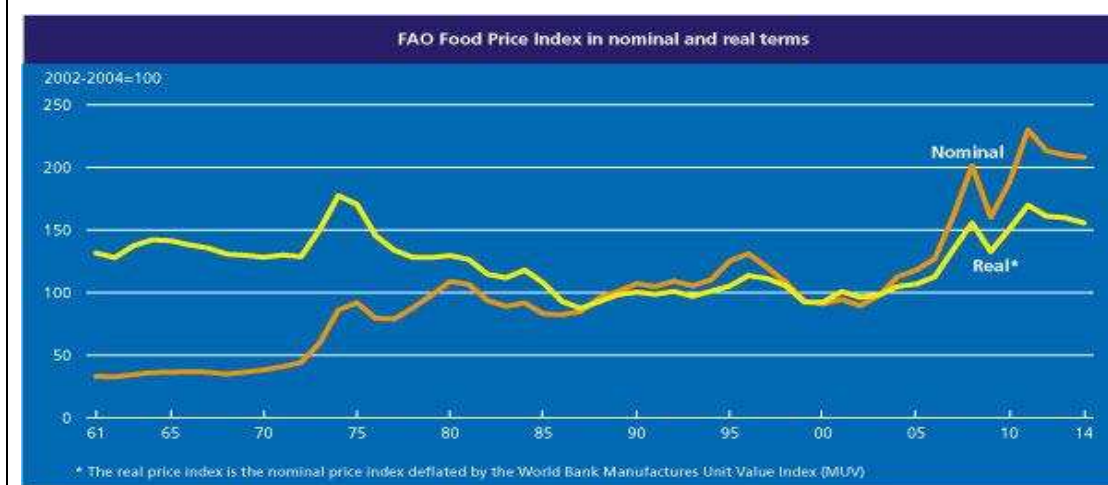
¹ Referred by the Economist as the 'Financial Crisis'
<http://www.economist.com/news/schoolsbrief/21584534-effects-financial-crisis-are-still-being-felt-five-years-article>. See also the Wall St Journal blog <http://blogs.wsj.com/eurocrisis/2011/12/06/global-financial-crisis-whats-in-a-name/>

² Begun in 2000 and discontinued in 2011 when the sample size became too small.

³ An index of the largest 200 companies listed on the ASX.

⁴ A shift in underlying medium / long term structural determinants of supply and demand as opposed to shorter term, chiefly weather related, cyclical changes of supply and demand.

Figure 2: Food and Agriculture Organization (FAO) Food Price Index



Source: FAO (2014)

Table 1: Foreign Ownership of Australian Agribusiness in 2010

Sector	Degree of Foreign Ownership
Grain trading and storage	40-55%
Dairy processing	50%
Sugar processing	60%
Red meat processing	40%
Pork processing	25%
Grain / oilseed processing	65-90%
Poultry processing	0%
Vegetable and cotton processing and beef feedlots	Predominately foreign

Source: ABS in Keogh (2012)

Keogh (2014) makes the point that those agricultural sectors that are export focused tend to have large degrees of foreign ownership. He also points out that a limited analysis of a selected group of listed Australian agricultural and agribusiness stocks indicated that shareholders with overseas headquarters accounted for between 30 – 60% of shareholdings. McKinna (2012) argues that without foreign capital Australia's post farmgate agribusiness sector would be a fraction of its size.

Eves (2012) notes that, despite the impressive productivity growth in Australian agriculture over the 30 years to 2004 (bettered only by telecommunications and IT) and the size of the sector (12.1% of GDP in 2009), the property and investment sectors had not focused on agriculture as much as other sectors, especially in the period from the 1980s until 2006.

2007's soft commodity boom changed this dynamic. Dominant local banks⁵ sought to expand their rural books and specialised personnel (Morris, 2008). This included, for instance, specialists transferred from their New Zealand operations to introduce NZ expertise in

⁵ Australian banking is dominated by four local banks.

syndication alternatives to the traditional family farm structure (Morris and Cranston, 2009). Syndication models had been highly developed in NZ as an important means of financing the massive expansion of its dairy industry over the previous two decades.

Importantly, domestic and international pension and investment funds' and Sovereign Wealth Funds' (SWF) interest in Australian farmland would also gather momentum over the six-year period of PAG's listing. Interest apparently accelerated as farmer debt levels lifted on the back of repeated adverse weather events. By 2011, about \$1B of assets were reportedly suffering weak prices because of high debt levels and ageing farmers seeking exit (Cranston, 2011a and 2011b). In 2008-09, foreigners secured over \$3B of land (Eves, 2012). By 2011, Hassad Foods (a Qatar government owned company) had secured 140K ha of Australian farmland for \$100M, for food security purposes, which is twice the amount of farmland available in Qatar (Houston and Millar, 2011). In the period 2010 -12, IFFCO, a United Arab Emirates (UAE) company purchased 20% of the listed Australian Agricultural Company (AACo, the largest listed beef cattle producer) and Terra Firma (a European investment firm) purchased \$425 million of beef cattle properties.

As Australia runs persistent Current Account deficits, foreign investment has always been an important source of development capital to compensate for the shortfall in domestic savings as well as often a source of new technology and management systems. Australian agriculture is no exception. Indeed, McKinna (2012) notes that United Kingdom and United States interests played a crucial role in the development of Australia's pastoral industry. Moir (2011) asserts that recent foreign buyers of Australian agricultural land can apparently be categorised into firms wishing to integrate up supply chains, investment or pension funds seeking profits from stand-alone ownership and operation and mining companies.

Despite periodic disquiet concerning the extent of foreign ownership, surveys by the Australian Bureau of Statistics (in Moir, 2011) found that between 1984 and 2010, the percentage of 100% Australian-owned agricultural establishments/businesses had only fallen from 99.7% to 98.5% (Table 2).

Table 2: Foreign Control/Ownership of Agricultural Establishments / Businesses by Number

	March 1984			December 2010		
	total	100%	joint and	total	100%	joint and
	number of	Australian	foreign	agricultural	Australian	foreign
	establishments	control	control	businesses	owned	owned
	no.	%	%	no.	%	%
NSW	53 011	99.7	0.3	43 309	98.6	1.0
Vic	45 984	99.9	0.1	32 575	98.4	0.7
Qld	34 167	99.8	0.2	28 638	99.4	0.5
SA	19 479	99.9	0.1	13 847	98.2	1.4
WA	16 750	99.3	0.7	12 592	97.8	1.2
Tas	5 664	99.9	0.1	4 070	96.2	2.8
NT	255	88.2	11.8	617	96.6	3.2
Australia	175 412	99.7	0.3	135 648	98.5	1.0

Source: ABS in Moir (2011)

Further, around 11% of Australian agricultural land was partly or wholly owned by foreigners in 2010, compared to 5.9% in 1984 (Table 3). Foreign ownership is more pronounced in some regions and industries, accounting for 18% of the Northern Territory, predominately in the cattle industry. Indeed, Moir (2011) points out that "The proportion of the value of agricultural production under foreign ownership was much smaller than the proportion of land owned by

foreigners, suggesting that foreign ownership was concentrated in the less-intensive forms of agricultural production”.

In 1984, 70% of foreign ownership was by UK and US interests (Moir, 2011). While comparable data was not collected in 2011, Foreign Investment Review Board approvals of transactions larger than \$231M and transactions by state owned entities indicate that US and UK dominance of foreign ownership of agricultural land may persist. Adoption of calls for a national register of land holdings may alleviate evident disquiet over foreign holdings.

In 2012, largely Chinese interests finally secured government approval for the purchase of Cubbie Station for reportedly \$230–250M. Cubbie is the largest cotton farm in Australia with its most extensive water entitlement. De Garis (2013) reports that the 2010/11 249K bale crop from Cubbie was worth more than \$150M. It’s sale process acted as a lightning rod for gathering political controversy around foreign ownership of agricultural assets, with much debate around the appropriate levels required to trigger Federal Government review and the need for an ongoing transparent register of holdings. More recently (November 2013), the Federal Treasurer has blocked the sale of east coast dominant grain handler GrainCorp to ADM for \$3.4B.

Table 3: Foreign Control/Ownership of Agricultural Establishments / Businesses by Area

	March 1984				December 2010			
	Total area '000 Ha	100% Australian '000 Ha	Foreign and part-foreign %	Foreign and part-foreign %	Total area '000 Ha	100% Australian '000 Ha	Foreign and part-foreign %	Foreign and part-foreign %
NSW	64 016	63 290	98.9	1.1	56 187	54 541	97.1	2.7
Vic	14 255	14 198	99.6	0.4	12 245	12 059	98.5	0.8
Qld	158 110	149 743	94.7	5.3	138 706	122 337	88.2	11.8
SA	62 063	59 372	95.7	4.3	45 131	39 654	87.9	12.1
WA	114 287	110 733	96.9	3.1	84 657	77 377	91.4	8.5
Tas	2 162	2 116	97.9	2.1	1 841	1 737	94.3	5.6
NT	71 666	58 617	81.8	18.2	59 223	45 102	76.2	23.8
Aust	486 559	458 067	94.1	5.9	397 991	352 808	88.6	11.3

Source: ABS in Moir (2011)

Funds were not only attracted by the size of investment deals available in Australia (Cranston, 2012a) but also the available returns. Swedish pension fund AP2, which teamed with US pension fund TIAA-CREF to purchase properties, including PAG’s, stated it was targeting a 7% return (Cranston, 2012a).

By 2011, the Australian Financial Review (AFR) reported that “at least \$4B is being raised to buy rural property around Australia” as illustrated in Table 4.

Table 5 indicates that NZ farmland returned much better than its stock market; that Australia and the US had similar returns to their stock markets and that Canadian farmland yielded less than its stock market, but close to the MSCI World Portfolio. *Note the 15 year study period as this period smooths out the variability in returns.* Interestingly, their study found that the risk associated with farmland investment is generally lower than stock market investment, even when compared to the US stock market, which has the lowest stock market coefficient of variation. Furthermore, a generally negative correlation between stock market and farmland returns (McKinna, 2012) increases the attractiveness of this investment class within a portfolio of assets.

Table 4: Funding for Australia's Rural Land

Fund	Investors	Commodity	Funding goal (\$M)
Agri Fund	Prime Ag, Australia's Future Fund, and US hedge fund	Cropping	600
JPT Capital Agrifund	Mauritius, Western Europe	Wheat	80
Westchester	Swedish SWF and US pension funds	Cropping	500
Macquarie	European and US	Cropping, dairy and pastoral	1700
Warakirri Asset Management	Superannuation funds and charities in Australia	Dairy and cropping	160
Sustainable Agriculture Fund	Domestic superannuation funds	Cropping, dairy and pastoral	350
Laguna Bay Pastoral Company	Open to domestic and offshore	Cropping	800
RM Williams Agricultural	Jersey (Channel Islands), US, PNG and domestic	Poultry, pastoral, carbon	140
Hassad	Qatar SWF	Sheep, cropping	100
TFS Corporation	Middle Eastern SWF	Timber plantations	300

Source: Cranston (2011b)

Eves and Painter (2008) compared Australian, Canadian, NZ and US farmland yields (income and capital gain returns) between 1990 and 2005 with T Bill and stock market returns (Table 5).

Eves' (2012) subsequent research focused on the NSW rural property market covering the period 1990 – 2010. He found that the seasonality of locations was reflected in farmland returns. While significant capital value declines had occurred in the drought effected mixed farming areas over the last three years to 12 months of the study, high rainfall areas had experienced the strongest growth, particularly in grazing areas, of high foreign purchases. The best returning areas over the full study period were the mixed farming areas of north and central NSW. Eves notes that the figures indicate that the average income return of the top 20% of producers was between 3.5 and 4 times the average NSW farmer and that these operators account for 80% of production. The average total return of the top 20% was around double that of the average farm. *Therefore, the metrics used by investors to judge the quality of a stock investment into agriculture, as well as the accounting of capital gains, could have considerable impact on a stock's performance, as will be illustrated in this case.*

Table 5: Average Investment Yields and Risk: T Bills, Farmland and Stock Markets* (1990 – 2005)

	Average Yield	Standard Deviation	Coefficient of Variation
Risk-Free Rate (T Bills)	5.6%	0.0%	-
Australia Farmland	9.8%	5.4%	0.55
Canada Farmland	5.9%	3.3%	0.56
NZ Farmland	14.4%	16.3%	1.13
Australia*	8.5%	18.3%	2.15
Canada*	9.3%	22.6%	2.43
New Zealand*	6.4%	26.8%	4.19
France*	8.5%	19.2%	2.26
Germany*	6.6%	24.4%	3.70
Italy*	6.1%	22.8%	3.74
Hong Kong*	9.1%	39.2%	4.31
Japan*	1.0%	26.6%	26.60
UK*	5.9%	15.8%	2.68
US*	9.4%	18.7%	1.99
MSCI World Portfolio*	6.9%	16.4%	2.38

Source: Eves and Painter (2008)

However, Eves reported that the majority of NSW farmland return was generated by capital gain, not operating income. Large and sustained rates of capital appreciation running ahead of gains in operating income indicate the formation of a bubble in asset prices. The fate of the northern cattle industry in recent years illustrates that agricultural assets are as susceptible to a correction as other assets. Following the build-up of bullish sentiment around the prospects for export northern cattle and a wave of investment into the industry in the middle of the 2000s, the declines in northern cattle property prices in recent years, particularly following halts in the Indonesian trade, are a salient reminder of how markedly asset prices can decline in a short period. Property advisors, Herron, Todd, White (2012) reported that in 2012 prices were down by up to 40% in western Queensland (Qld), that a glut of properties were for sale in northern Qld and that in the northern Northern Territory (NT), properties had been on the market between nine months and more than three years. Similar conditions pertained to northern Western Australian (WA).

PAG's assets were chiefly cotton-related and water entitlements, albeit with the flexibility to swap into other crops as opportunities arose. Boyce (2012) indicates that in 2007 and 2008 the cotton industry was almost making no average operating profit per ha before interest. These increased to a 15 year high in 2011 before easing again in 2012. Increasing returns were presumably feeding into asset prices during the later part of the period. Table 6 indicates the industry's production recovery from 2010.

Table 6: Australian Cotton Production 2005 - 2012

Year	Total Bales	Ha Sown	Bales Per Ha
2011/12	5M	583K	8.6
2010/11	4M	600K	6.7
2009/10	1.6M	182K	8.7
2008/09	1.5M	160K	9.3
2007/08	0.6M	69K	8.8
2006/07	1.2M	134K	8.9
2005/06	2.6M	334K	7.9

Source: Cotton Australia in De Garis (2013)

Eves also notes the importance of the high returns of the best operators as targets adopted by both national and international institutions. The differences between average and top 20% operators are further borne out by Boyce's (2012) figures which indicate that the top 20% of cotton farmers made 130% more profit than the average over five selected years. Thompson, Lacy and Shore (2011) reported that the Jim Rogers-backed Laguna Pastoral Company announced that it planned to partner with existing landholders by adopting a landlord model and leasing land back to its operators. Laguna would later become a shareholder on PAG's registry.

The set of competing models of capital entry into agriculture continues to evolve, to match the risk-reward profiles of discrete groups of investors with the attributes of agricultural assets.

3. Phase One: PrimeAg's Investment Strategy (The 2007 Prospectus until end of FY 2010)

The centrepiece of PrimeAg's strategy was the construction of a quality property portfolio located across five hubs, or closely co-located sets of properties, that provided a natural climatic and environmental hedge for crop production. This geographic hedge was designed to produce a stable earnings profile. The importance of this was the presumed attractiveness of a listed entity's stable earnings profile to investors. A consequence of the strategy is that removing earnings volatility implies that the scope for large increases in returns is also muted. This underpinned the importance of irrigation to lessen the reliance on rainfall in a continent with one of the world's most variable climates. Indeed, the Prospectus noted that there "is significant evidence from the International Panel on Climate Change to suggest that the climate is becoming drier, warmer and subject to more extreme weather events" (p.25).

The comparative degree of Australia's climatic variation is immediately apparent from Table 7 which illustrates the historical peak to trough ratios of selected world river systems. The last four entries, the Namoi, the Gwydir, the Condamine and the Macintyre systems, are part of the Murray Darling Basin and contained four of PAG's hubs. The Nagoa - Fitzroy river system, the location of the other PAG hub, is similarly variable.

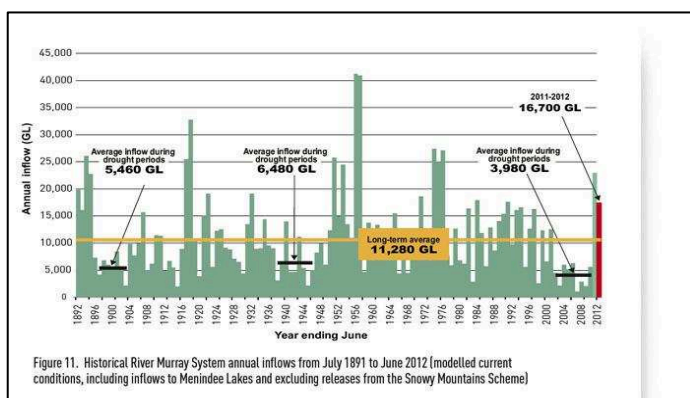
This variability is largely driven, on the continent's east coast, by a combination of the Southern Oscillation (El Nino / La Nina cycle) and the rain-shadowing effect of the Great Dividing Range. Figure 3 illustrates a pattern of extended droughts and floods across the last century in the Murray Darling Basin (MDB), which drains much of the agricultural regions of southern Qld, NSW and Victoria. (The black bars indicate years of extended drought.) The MDB accounts for much of Australia's cotton production.

Table 7: Historical peak to trough ratios of selected world river systems

Country	River	Ratio Between the Maximum and Minimum Annual Flows
Brazil	Amazon	1.3 [^]
Switzerland	Rhine	1.9 [^]
China	Yangtze	2.0 [^]
USA	Potomac	3.9 [^]
South Africa	Orange	16.9 [^]
Australia	Murray	15.5 [^]
Australia	Hunter	54.3 [^]
Australia	Darling	4705.2 [^]
Australia	Namoi (EOS [*])	139.2 ^a
Australia	Gwydir (EOS [*])	46.15 ^b
Australia	Condamine (at Warwick)	104.8 ^c
Australia	Macintyre (at Goondiwindi)	28.23 ^d

Sources: Kirk (2008[^]), Murray Darling Basin Authority (MDBA, 2010^{a-d})

Figure 3: Historical River Murray System Annual Inflows from 1891 - 2012



Source: Murray Darling Basin Authority (2012)

This natural climatic variability underlines the importance of irrigation along river systems to Australian agriculture as illustrated in Table 8.

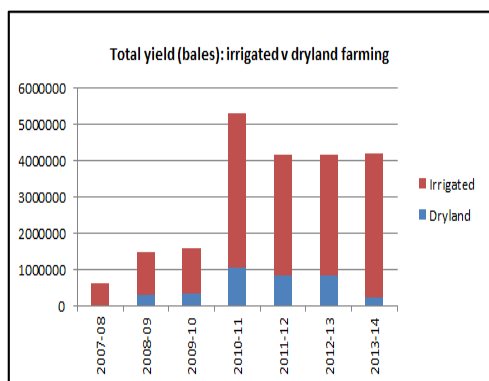
Figure 4 indicates that over 80% of Australian cotton production, by volume, is typically irrigated. In 2012/13, around 95% of Australia's cotton crop area was irrigated (442K ha), with dryland planting (23K ha) falling 80% due to higher grain prices (USDA, 2013) and reduced soil moisture profiles.

Table 8: Irrigation across Australia, 2004

Total irrigated area	2.5M ha
Proportion of Australian area	<1%
Water diverted for irrigation	16,660GL
Proportion of water used	67%
Irrigated farm gate revenue	\$9.6B
Proportion of total agricultural production	28%
Proportion of total agricultural profit	51%

Source: ABS (2004)

Figure 4: Australian Cotton Yields



Source: Cotton Australia (2014)

PAG's five farming hubs were spread across 1200km and their range is illustrated in Figure 5. The selection of the properties within these hubs was based on five criteria.

First, they were located in areas of high rainfall regarded as historically reliable for both winter and summer crops and suitable for a diversity of crops. This meant that management could swap between crops in response to both climatic events and market conditions. The main irrigated crop was cotton and the main dryland crop was wheat. Other crops included chickpeas, sorghum, mungbean, corn and silage/hay as well as cattle production. Each hub was based around irrigated farmland in the river valleys of the Nagoa - Fitzroy (Emerald, Qld), Macintyre (Goondiwindi, Qld), Condamine (Dalby and Darling Downs Qld), Gwydir (Moree, NSW) and the Namoi (Gunnedah, NSW). Four of these five rivers lie within the Murray Darling Basin and all lie in Australia's cotton producing region (Figure 6).

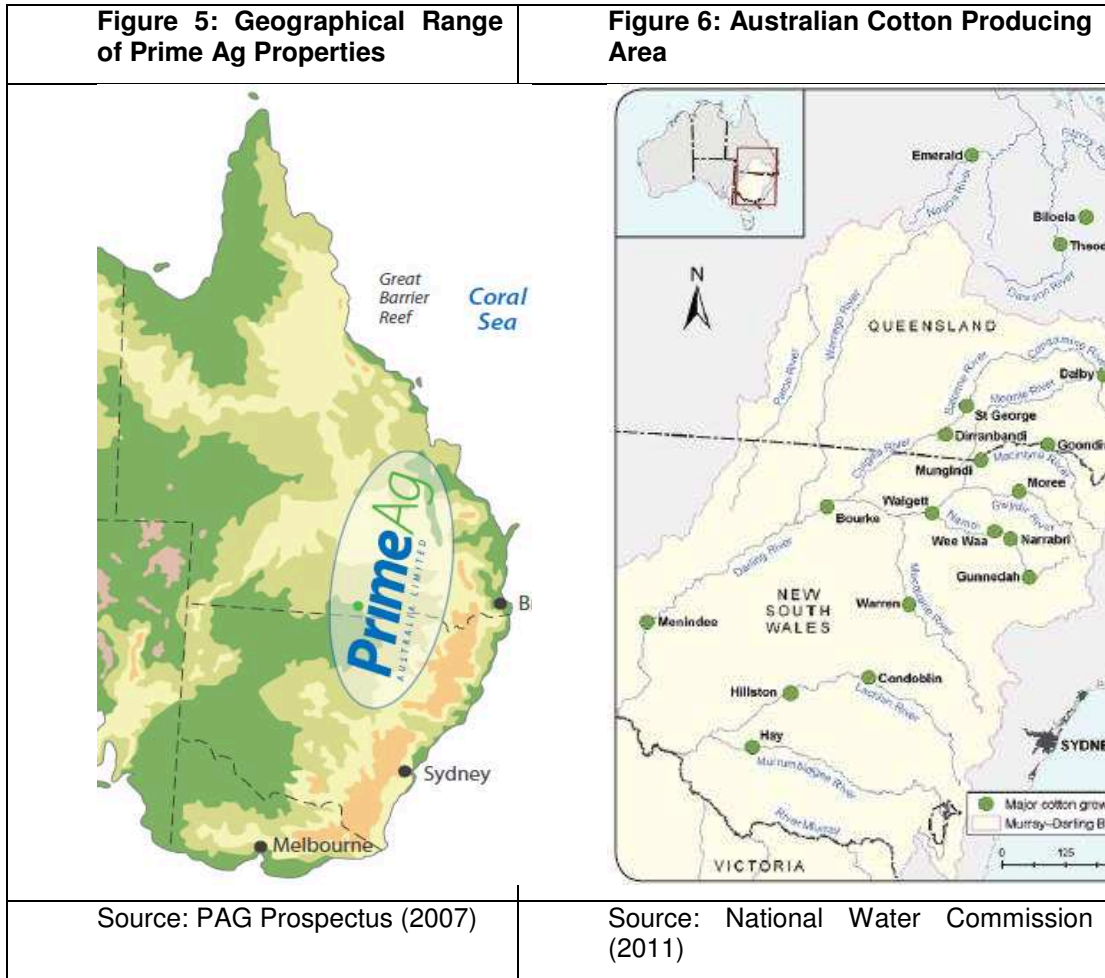
Second, the envisaged addition of subsequent, closely located irrigated and dryland farms, was designed to attain scale and operational efficiencies by amalgamation of management, labour and machinery. For adjacent properties, reconfiguration of paddocks and irrigation layouts to create further efficiencies, especially in water use, was possible.

Third, property selection criteria focused on a *mix* of "proven dryland and/or irrigated crop production performance" (PAG Annual Report, 2009), with irrigation operations supported by investment in water allocation entitlements. The aim was to secure sufficient entitlements to irrigate 25% of the total land holding (PAG Prospectus, 2007) but not to create an over reliance on any one river system. The Annual Reports indicate that this was achieved.

Fourth, all properties were assessed for their agronomic production potential, including soil type, water holding capacity, weed and disease history and nutrient status. This included assessments of the potential for improvement, such as the installation of satellite systems to utilise GPS controlled traffic systems, and future development, including the conversion of grazing to farming.

The fifth criterion for property investment was independent valuations to establish fair value so as to compute acceptable rates of return upon acquisition. Independent external valuation was especially important as several Directors were owners of a number of former seed properties within the PAG portfolio.

Collectively, these five criteria provided the basis for efficiencies within and across farming hubs, as illustrated by Figures 7 and 8. *Within* hub synergies included common management, improved machinery utilisation, improved labour utilisation, competitive contractor price and shared infrastructure including sheds, grain storage, yards and housing. *Across* hub synergies included bulk purchasing savings, group marketing efficiencies, including cost effective hedging and forward contracting, financial strength from a consolidated balance sheet and cashflows, improved machinery and labour utilisation, managerial specialisation and back office consolidation.



Performance measurement was against the top 20% of Australian producers for a given crop. If the earlier noted ratios of performance across NSW farms pertained nationally, this implies that Prime Ag were aiming for operational returns of up to four times the average and total farmland returns around twice the average.

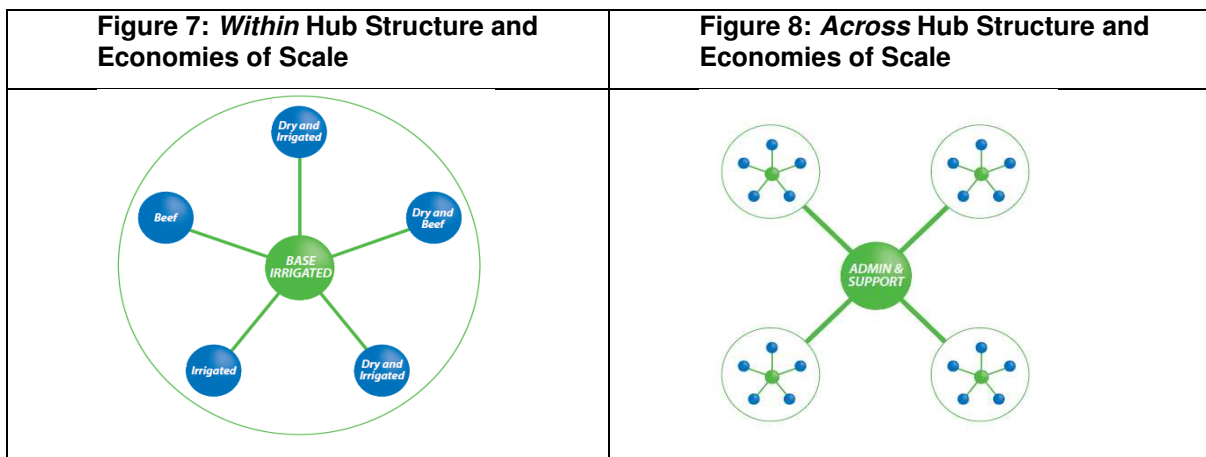


Table 9: Some Major Weather Event Impacts on Prime Ag Farming Hubs, 2008 - 2013

Hub	FY Year	Event: Winter (W) and Summer (S)	Production and Financial Impact
Emerald	2008/ 2010/ 2011	S Flooding / S Cyclones + flooding / S flooding	Yields halved; \$0.5M damage cost / Yields and quality loss : \$6.6M production loss; \$5M damage cost / 55% yield and quality loss
Goondiwindi	2010/2011	Dry W / S flooding	Severely reduced wheat crop + limited irrigation water+ reduce cattle numbers
Darling Downs	2010/2011	Dry W / S flooding	Severely reduced wheat crop + limited irrigation water+ reduce cattle numbers / 30% yield and quality loss (across 3 hubs: 25K bales and total \$9M without quality losses) Condamine farm 100% yield and quality loss
Moree	2010	Dry W	Severely reduced wheat crop + limited irrigation water+ reduce cattle numbers
Gunnedah	2010	Dry W	Severely reduced wheat crop + limited irrigation water and soil profile for summer crop

Sources: PAG Annual Reports and Company Announcements

Table 10: Prime Ag Farming Hubs, as reported in 2009 with 82% of raised funds spent

	Emerald	Goondiwindi	Darling Downs	Moree	Gunnedah	Total
Total Area (ha)	3,796	10,344	10,315	8,833	6,952	40,240
Irrigable (ha)	2,313	2,961	1,755	1,713	2,303	11,045
Dryland (ha)	300	3,851	7,145	5,216	2,549	19,061
Grazing (ha)		2,349	914	1,048	1,465	5,776
Other ⁶ (ha)	1,183	1,183	501	856	635	4,358
Water Access entitlements (ML)						
Fixed	14,573	10,650	502	7,180	3,502	37,407
Harvesting	4,306	9,245	5,375	2,692	6,763	26,415
Total Entitlement	18,480	19,895	6001	9,757	10,165	64, 298

Source: PAG Annual Report (2009)

⁶ Service areas, dams, irrigation infrastructure, natural country

Table 11: Reported Capital works to improve efficiency across PAG Farming Hubs, 2008 – 2013

Hub	Year	Works	Efficiency Impact	Completed or planned
Emerald	2008/10	\$3M Flood remediation + earth works / Irrigation and flood protection	Water use efficiencies / 500+ ha crop @ potential \$1M profit	Completed
Goondiwindi	2009/10	Pump upgrades	Water use efficiencies	Completed
Darling Downs	2011/12	Condamine Flood remediation + earth works Downs lateral irrigation	Water use efficiencies	Completed
Moree	2010/12	Irrigation and management changes	Increased water efficiency & reliability. Contract dryland farming	Completed
Gunnedah	2010	Irrigation and management changes / new ground water bores	Increased water efficiency up to 20% / 50% reduction in energy costs & 2X output	Completed
Across hubs	2010	Centralised admin and improved systems / large scale supply agreements	Reduced overheads (\$0.2M), increase transparency, reduce input costs	Completed

Sources: PAG Annual Reports and Company Announcements

Table 12: Irrigated Cotton Production Performances (Dryland Production Performances If Stated)

Hub	Crop year	Growing conditions / plantings	Outcome: Yields and below, at, or above total production target
Emerald	2009	Below average – heavy rainfall at harvest	Fair - bit below target Floods impact picking; major losses
	2010	Poor – major floods	Wipe out
	2011	Poor	Below target
	2012	Average	Below target
	2013	Average	Target
Darling Downs	2009	Average area planted Dalby No crop at Condamine Dryland cotton at Dalby	Average yield & target Target
	2010	Poor - floods wipe out Condamine	Below target
	2011	Average area planted irrigated and dryland	Below target yields dry & irrigated
	2012	Average area planted Dalby & Condamine both irrigation & dryland	Above average yields and above target
	2013	Average - floods at end of season	Above target
Goondiwindi	2009	No cotton due to no water; grew dry sorghum	Average yield
	2010	Below average area planted Dryland cotton	Very good yields Very good yields
	2011	Above average Dryland cotton	Very good yields; above target Bit below target
	2012	Above average Dryland cotton	Very good yields above target Above target
	2013	Above average area	Very good yields above target
Moree	2009	Very reduced area planted due to low water	Yields good but totals below target
	2010	Very reduced areas planted - low water allocation Dryland cotton	Yields at target above target
	2011	Average Dryland cotton - low rain	Very good yields Down a bit
	2012	Lesser area planted Dryland cotton	Very good yields above target Very good yields
	2013	Average Dryland cotton - low rain	Very good yields Below target
Gunnedah	2009	Very reduced area planted due to low water allocation	Yields good but totals below target
	2010	Above average	Average yield; target
	2011	Average area planted	Poor yield - below target
	2012	Average area planted dry and irrigated	Average yield for dry and irrigated. Target for irrigation, above target for dryland
	2013	Average area planted	Average yield and target

Sources: Extrapolated from PAG Annual Reports and Company Announcements

Table 13: Winter Crops Production Performances

Hub	Crop year	Growing conditions	Outcome
Emerald	2009	Average	Fair - bit below target
	2010	Poor - floods wipe out	Below target
	2011	Poor	Below target
	2012	Average	Below target
	2013	Average	Target
Darling Downs	2009	Average area planted no crop at Condamine	Average yields. Target production
	2010		
	2011	Average area	Average yields
	2012	Below average areas	Target yields
	2013	Average	
Goondiwindi	2009	Grew irrigated wheat & chickpeas	Average yields and target production
	2010	Above average area planted / low rainfall	Low yields
	2011	Above average area planted	Target yields
	2012	Above average area planted	Target yields
	2013	Above average area planted	
Moree	2009	Grew irrigated wheat	Target production
	2010	Dryland wheat / low rainfall	Yields below target
	2011	Dryland wheat - average area planted	Target production
	2012	Dryland wheat - average area planted	Average yield
	2013	Dryland wheat area reduced planting due to low rainfall	Yield down
Gunnedah	2009	Above average dryland wheat	Yields good
	2010	Above average area irrigated wheat dryland	Average yield, at target Below target
	2011	Dry conditions / average area planted	Poor yield - below target
	2012	Dry conditions / reduced area planted	Target for irrigation, Above target for dryland
	2013	Dry conditions / average area planted	Reduced yields – at target

Sources: Extrapolated from PAG Annual Reports and Company Announcements

Table 14: Farm Operation Profits, 2008 - 2013 (\$K)

	2008	2009	2010	2011	2012	2013	5Y av
Purely farm revenues	13,677	64,188	64,312	99,108	115,492	121,723	79,750
Costs	-16,616	-66,359	-69,522	-91,317	-111,560	123,804	-79,863
Purely farm profits	-2,939	-2,171	-5,210	7,791	3,932	-2,081	-113
Forecast profit	-	-	16,600	16,000 – 25,000 Reduced to 11,000 to 17,000	> 20,000 + fund manage fees Reduced to 6,000 to 16,000	-	
Reported Profit from farming operations before income tax	2,803	-399	-4,641	8,445	10,384	3,606	3,336

Source: PAG Annual Reports

Table 15: PAG Reported Profits, Balance Sheet Asset Values and NAB per Share, 2008 - 2013 (\$K)

	2008	2009	2010	2011	2012	2013	5Y Avg.
Reported Profit from farming operations before income tax	2,803	-399	-4,641	8,445	10,384	3,606	3,336
<i>Fair value on land, buildings and improvements and water rights impairment expense</i>		-5,828	-3,546	1,622	-3,234	-30,504	-8,298
Profit from continuing operations before income tax	2,803	-6,227	-8,187	10,067	7,150	-26,898	-3,549
Income tax (expense)/benefit	-848	1,902	2,462	-3,034	-2,159	-4,083	-960
Net profit for the period after tax	1,955	-4,325	-5,725	7,033	4,991	-30,981	-4,509
Asset revaluation reserve		1,361	1,659	3,725	5,927	2,147	

Source: PAG Annual Reports

Table 16: PAG Share Values and NAV per Share, 2008 - 2013

	2008	2009	2010	2011	2012	2013
Share Value 1 July	1.92	1.04	1.03	1.28	1.12	0.84
Net Asset Value per Share	1.95	1.93	1.89	1.95	1.65	0.90
Share Price to NAV per Share Discount %	1.42%	46.07%	45.57%	34.45%	31.98%	6.71%

Source: PAG Annual Reports

Outcomes

The Annual Reports and Company Announcements indicate a number of outcomes with respect to operational and total returns. First, it is apparent that the level of short-term climatic variation experienced across the period and across hubs was far greater than that envisaged in the Prospectus. For instance, cyclonic floods in Queensland in 2009 and 2010 impacted significantly on cotton production in Emerald in both years and Condamine and Dalby in 2010. Emerald was again struck by poor picking conditions in 2013. Very dry conditions in 2009 in the non-Emerald hubs resulted in little dam water availability. As a result, limited summer irrigation crops were grown that year. While water allocations were good in 2010 and summer irrigated and dryland crops had good yields, winter dryland crops suffered from dry conditions. Table 9 lists some of the impacts of adverse weather conditions for the period 2008-13.

Another notable feature of the Annual Reports is the impact of accounting standards on the reporting of movements in property valuation. Changes in land assets were divided between the balance sheet's revaluation reserves and income statement while reductions in water asset values were taken to the income statements (Table 15). Australian accounting standards (AASB 116) require that increases in a noncurrent asset that has previously been impaired, such as property, is first recognised as income to the value of the previous impairment, with the balance transferred to equity. Any decrease is to be treated as an expense, unless it is a reversal. In addition, AASB 138 specifically excludes the revaluation of some intangibles that do not have sufficient liquid secondary markets to establish a fair value. Consequently, increases in the value of water entitlements could not be recorded in the company's reports, although impairments were recorded to the income statement. With the exception of FY 13, in which the impairment charge was a result of realised losses from property sales, downside movements in asset prices had a material impact on reported earnings. Below forecast reported earnings contributed to mounting investor concern. That the share price was less than the share's Net Asset Value (NAV)(Table 16) implies that either valuations were incorrect or the market didn't believe them.

Also notable from the Annual Reports was the company's policy of not carrying core debt. It did this as a means to insulate itself from the vagaries of fluctuating production and commodity prices. As late as 2011 the company carried over \$10M in cash. While understandable, particularly given the weather events during the period and the generally unstable financial conditions and associated additional swings in soft commodity prices and appreciation of the AUD, carrying no debt also contributed to a high NAV per share.

A languishing share price and low share-to-NAV ratios (Table 16) made the company ripe for investor dissatisfaction and attention from potential shareholders interested in liquidating the company's assets. As early as May 2010, GuinnessPeat Group (GPG), a noted corporate raider, had built a 16.9% holding. It maintained its largest shareholding status until well into the 2013 FY and was a participant in the events leading to PAG's asset divestment and privatisation. So also was the previously listed but, since 2007, privately held, Australian Food and Fibre (AFF), which began building a shareholding in PAG by mid-2010 (Freed and Thompson, 2010). Like PAG, AFF is a spatially diversified landholder. Unlike PAG, AFF is a specialist cotton producer. Indeed, AFF Chairman, David Robinson stated that AFF and PAG were "just too small, and too asset rich for the market to recognise their true value" (in Manning, 2012).

Second, the hub strategy was apparently incompletely executed across the various hubs, in that several of the hubs were presumably not at a minimum efficient scale⁷ or at least at a scale permitting significant scale economies. Table 10 outlines the last reported summary of PAG's farming hubs from the 2009 Annual Report and indicates that the key irrigation portion of the hubs at Darling Downs and Moree were considerably smaller than Emerald and Gunnedah which in turn were considerably smaller than Goondiwindi.

De Garis (2013), reports that a typical Australian cotton farm is between 500 – 2000ha including dryland areas used for the production of other crops and infrastructure. With respect to the potential for scale economies, he points out that Cubbie, a single entity, consists of 90K

⁷ Minimum efficient scale is a point on the long average cost curve that flattens indicating that further scale economies are unattainable.

ha of which 22K ha was irrigated, which is more than seven times the irrigated land at the Goondiwindi hub.

Further, time is required from the formation of a hub to establish management systems and have them fully functional. It is likely that management systems will also take time to bed down across additions to a hub. This process is likely to be slowed when capital improvements are necessary to put in place desired production regimes, although across-hub efficiencies, as described by Prime Ag, suggest that central expertise would be available to undertake capital improvements and institute management tools that were generic across the group. Table 11 tracks PAG's reported capital expenditure and development projects.

Third, several references are made to production targets having been achieved or exceeded when average growing conditions pertained, as outlined in Tables 12 and 13. These outline growing conditions and outcomes extrapolated from Annual Reports and Company Announcements over the crop years 2009 – 13. The tables suggest each of the individual hubs achieved performance in the top 20% of their peers but never all at the same time. The implication of achieving its goal of matching with the top 20% of industry *is that the geographic spread smoothed out this achievement and subsequent flow through to overall returns*. Note that the first of these targets were reported as achieved in the second years of operations, indicating minimum times required to bed down management and production systems as discussed earlier.

The variation in production outcomes, in combination with soft commodity price movements and exchange rate changes, are reflected in the farm operating returns achieved as presented in Table 14. This table is taken from Appendix 1, a collation of yearly Income Statements. Total revenues from the Income Statements consist of: sale of goods; other revenue (mainly interest); net operating income derived from biological assets (value of standing crops and livestock); and other income (mainly insurance for flood damage / gains on forward contracts sold). Leaving out the other revenue (mainly interest) item leaves the purely on-farm returns; leaving in insurance returns is fair as flood losses were generally expensed in the year they occurred. By the fourth year the group was making profit on this basis. Note the discrepancy between guidance forecasts of profits and actual results as a result of the impact of climatic events, commodity and exchange rate movements. Lau (2009) reported that PAG's own sensitivity analysis for the coming FY 2010 yielded a range between a \$37M profit and a \$1.1M loss. He also noted that the stock was being discounted due to 'lack of earnings clarity' (as 'predicting earnings for the company is notoriously difficult given that it is affected by a number of variables, many of which are outside its control'), a rising AUD, concerns of land price falls and better returns in the wider market. Note that opening and reduced forecast profits were above the actual results for the two years of 2011 and 2012. This evidently contributed to shareholder discontent.

There is also a wider strategic issue at play with the decision not to take on debt somewhat reflective of the norm in farming of around 20%. An additional \$60M debt may have helped accelerate execution of its strategic plan and bring all hubs to sufficient scale and operational excellence faster. Or, perhaps, it could have assisted with the purchase of larger distressed assets, or assets under financial pressure – of hub scale - that became available during the period, such as the Carrington asset (Thompson and Mercer, 2011).

By FY 2011 the Board had announced that it wished to pursue an additional strategy to better leverage the company's management assets and secure a stable income stream.

4. Phase Two: Diversifying and Stabilising PAG's Income (The August 2011 Rights Issue until end of FY 2012)

Media speculation became evident from late 2010 that PAG wished to create an unlisted fund to purchase major assets such as Carrington (Ahmed and Thompson, 2010), and Cubbie, which were distressed. By 2010, media discussion was also speculating that PAG was an obvious break-up target (Whyte, 2010). Selling properties that had been improved and appreciated, but were not central to achieving hub efficiencies, was consistent with PAG's Prospectus strategy.

Shortly after the release of the FY 2011 Annual Report, PAG announced that it had secured a partnership with the Future Fund to co-invest \$125M each to purchase and operate agricultural property in an unlisted entity. The intention was to secure other partners and lift the target

investment amount towards \$600M, with the Future Fund stating it would contribute another \$75M matching the next \$75M from new investors. This would provide a more stable income stream for PAG from management and performance fees.

The Prime Ag Trust fund, (the 'Agri Fund'), was separate to PAG and could not buy land assets close to PAG's properties. That is, the two shared back office facilities and broader management but the assets to be purchased would be stand-alone assets, so scale economies between the two were limited to *across* hub economies. This was to avoid conflicts of interest in that co-located assets would affect the other's property prices and make difficult the allocation of costs.

The Future Fund did not place the money into the 'Agri Fund' but was contractually required to contribute to purchases. The Agri Fund applied a strict due diligence policy to ensure that assets would be only acquired at values that met its strict return requirements. PAG's stated intention was to achieve a combined (operation and capital growth) 13% return from the fund net of fees (Cranston (2011a) / PAG Investor Presentation). The point is, the Fund's target was considerably higher than its foreign pension and sovereign wealth fund competitors (see earlier discussion), implying that it would be unlikely to outbid them for assets. The 2012 Annual Report states that 'offers were made on four aggregations, although none were accepted by vendors on the basis of the Fund's financial return expectations'. CBA Equities noted that "if the equity raising and restructuring rationale is to 'acquire assets at attractive entry prices' and these rural land and water assets are in comparable areas to Prime Ag's portfolio, then this raises concerns about Prime Ag's book values" (in Thompson and Mercer, 2011). Presumably, suitable assets at these mentioned IRR would have to have a *great* deal of latent synergistic and development value, suggesting that either very large purchases, or an aggressive quick series of smaller contiguous purchases that aggregated into a large hub, would be needed to realise the value targeted. Large assets either distressed or under financial pressure, such as Cubbie or Carrington could have provided significant upside in normal growing years as they already had within-hub economies of scale and were not in areas of PAG's assets. This is important as investment in a single asset would permit greater returns in a normal year (especially if purchased at a deep discount) relative to a portfolio approach in which the average return in any given year would be lower but less volatile.

Another reason why the Agri Fund did not make any purchases is presumably because of the uncertainty created by PAG's changing shareholder composition. PAG was required to contribute its \$125M via an accelerated non-renounceable entitlement offer in which shareholders would be offered 10 new shares for every 13 shares held. The \$1.08 price was a 16% discount to the existing share price, which was already discounted to its NAV. While some shareholders indicated support for the Rights Offer, as they welcomed the opportunity for a more stable income flow, it also elicited protests from 30% of shareholders, notably AFF, Select Asset Management (SAM) and GPG. They were chiefly concerned about the dilution effect and possible conflicts of interest - although the governance of the new fund would stipulate that it could not purchase existing PAG assets. SAM was comfortable with PAG developing external funds, but not "by making existing shareholders stump up the funds ... at a big discount to net asset value" (Cranston, 2011a). Further, Cranston and Thompson (2011) reported that AFF Chair, David Robinson, criticised the development as he felt PAG did not have the "management track record which demonstrates that they have the capability to treble the size of their management commitment". AFF initially proposed ousting much of the Board and taking the Chairmanship. While SAM and AFF took up their entitlement, GPG's holding dropped to 11% after the issue, and while it is notable that GPG was winding down its \$1B investment portfolio at the time, there was some speculation that it had to do with GPG annoyance (Thompson and Mercer, 2011). Washington H Soul Pattinson also did not participate. Notwithstanding, the Rights Offer was fully subscribed.

The Rights Offer developments further fuelled demands for asset sales. Commitment was made to shareholders at the 2011 AGM (Nov 2011) to sell properties identified in a 2010 review as not core to the hub strategy but that had been improved and were therefore ready for sale. \$40M of properties were settled by July 2012 at a 1.9% discount to book value and leased back to PAG for between three years and six months. They were sold to a US pension fund, backed by a Swedish pension fund. The funds were earmarked for distribution to shareholders, which brought criticism from some shareholders following the earlier capital raising (Thompson, Shore and Macdonald, 2012) although PAG maintained in May 2012 that no further large scale

property sales would occur (Cranston, 2012c). This apparently did not stop the pressure for further asset sales as the 2012 Annual Report listed further properties for sale.

It is noteworthy that AFF was at the time building its rural land portfolio and acquired a reasonably-sized northern NSW cotton property in March 2012. The company had previously sold and leased back \$200M worth of farms; indeed, the company's preferred strategy was to "half own land and half lease it" (Robinson in Cranston, 2012b). Cranston (2012b) reports that it had achieved a big lift in profitability in 2011 and good production outcomes. Some PAG assets would fit well with AFF's portfolio and ultimately AFF would gain these at significant discount to book value.

5. Phase Three: PAG's Windup (The FY 2013 Sale of Assets and Scheme of Arrangement)

By the end of August 2012, Prime Ag's Board had announced its intention to seek shareholder approval to commence privatisation of its assets and return the proceeds to shareholders. This was because the market failed to recognise the value of its assets. It would seek to divest either by public tender or via a process of orderly divestment if the tender process did not yield at least a \$1.30 of the NAV of \$1.58.

In late 2012, Laguna Bay bought 11% of Prime Ag stock as it positioned itself for the sale of PAG's assets. The fund had been raising capital to invest in farmland and form 'alliance partnerships' with operators, essentially leasing land back to farmers, so it was not apparent how PAG fitted into its stated mandate. (Laguna's strategy illustrates yet another model for connecting investors of particular risk/reward profiles to different classes of agricultural assets.) According to Cranston (2012d), it was also seeking possible opportunities with the Future Fund via the Agri Fund. The Future Fund could exit the arrangement if there were a change of management at PAG. At the end of the FY, Laguna Bay was not in the list of significant shareholders.

In February 2013, PAG announced that it would sell 60% of its land and water portfolio to the same US fund manager responsible for the earlier property purchase for \$125M at a slight discount to book value. By the end of the FY, shareholders had received \$1.01 per share from the distributions of these asset sales.

The remaining assets consisted of the Emerald hub and an assortment of other properties. Presumably, this implies that the loss of across hub scale and the loss of within hub scale from remaining non-Emerald properties would have lifted unit costs. This may be an explanation for the significant discount to book for the remaining assets as, in isolation, they had fallen in value. The Emerald property was sold to Cowral 'an entity affiliated with Global Endowment Management' (Annual Report, 2013); Global Endowment Management is cited by Cranston (2012d) as a backer of the Laguna Bay fund. It was sold at a 39.5% discount to book value (Mitchell, 2013). The remaining assets were sold under a Scheme of Arrangement under which AFF acquired all the shares of Prime Ag that it did not already own, so that the company would delist and become a subsidiary of AFF. These assets were sold at a 16.4% discount to book value (Mitchell, 2013). As they were asset impairments, they were recorded on the Income Statement for the year and a consequently a \$3M operational profit became a \$30M loss. Binsted (May, 2013) noted that a portion of these properties were formerly owned by PAG directors.

6. Conclusions

McKinna (2012) argues that Australian investors are not supportive of rural investment as evidenced by listed entities that consistently trade below NAV. This is despite agriculture having returns competitive with stock markets over the long term and that are usually counter cyclical. His argument seems to be that a lack of appreciation of food security issues in Australia results in a lack of appreciation for the long term value of these assets when the industry needs capital to improve scale and operating efficiency.

Counter to this view regarding a local lack of appreciation for agriculture may be the perception that higher structural interest rates in Australia create a higher risk-free return base, compared

to many other countries with lower interest rates, onto which must be added an equity return for risk. Consequently, assets will transfer to foreigners across a range of industries, not just agriculture, as appears to have been the case for some years. That these pressures are most keenly felt in the liquid stock market suggests that listed agricultural entities, with capital intensiveness and variable returns, may continue to struggle with low NAV to share price ratios. Listed public companies require stable earnings and PAG's portfolio approach implies not only the limiting of loss, but also the limiting of significant gains available from agricultural assets. Privatisation and delisting from the ASX has been the fate of other Australian farming companies including AFF (Brown, 2013).

Indeed, a private or unlisted entity with less short-term performance pressure may have had two options available to it. First, it may have been able to implement PAG's strategy of a series of high performing hubs over a longer time period and place less pressure on property markets. However, this implies that local patient investors – say superannuation funds – will be comfortable with returns more in keeping with those acceptable to international investors. Perhaps, frequent newspaper speculation as to impending pressure on equities from an ageing population seeking to draw on superannuation may reduce the level of returns demanded from long-term investors.

Second, a private or unlisted entity may have been able to accept the inherent risk associated with a large, single asset in pursuit of significant returns in good production and price years. It would not face the pressure to spend the cash on its books and thus avoid impacting property prices, but instead be able to wait patiently for distressed assets when they presented.

Presumably PAG (and the Agri Fund) could have strategically bid for either a constellation of properties to quickly form a hub, augment existing hubs or purchase a very large property aggregation such as a Cubbie or a Carrington. However, this implies paying a higher price (which was at odds with the mandate), but identifying that value can be created over the longer term upon proper investment into the technology and systems needed to realise the scale advantages. This is apparently a big call for a listed entity with impatient capital.

An associated point is that these types of speedy purchases could have been part-financed with debt and this would have also assisted with NAV to share price.

Inherent in all of the above is the amount of time assets are to be held when measuring returns. PAG's life as a listed entity was six years: Eves and Painter's (2008) analysis spanned 15 years.

Lastly, it would seem that the challenge of climatic variability on returns may be set to increase as illustrated by PAG's run of weather-related events and commodity price swings which are also often as a result of weather events elsewhere on the globe. If so, then this has two implications. While the variability of returns will further increase, the increase in risk should imply that the rate of return from agricultural assets should also rise. In turn, this further suggests that matching these evolving characteristics of the agricultural investment to a suitable class of investors able to tolerate bigger swings in, but higher levels of, returns will become more, not less, important. It may also suggest that those farm management skills not able to be standardised, but particular to locale, may also rise in value.

7. References

Ahmed, N. and Thompson, S. (2010) 'GPG's sweet exit from sugar producer'. *Australian Financial Review*. 2 November.

http://www.afr.com/p/opinion/gpg_sweet_exit_from_sugar_producer_4BdioNqGJJ2bDzBJIDitON

Australian Bureau of Statistics (2004) *Water Account Australia 2000-01 4610.0 Implications of water reforms for the national economy*, prepared for the National Program for Sustainable Irrigation by the Centre for International Economics, Canberra.

<http://www.abs.gov.au/AUSSTATS/abs@.nsf/Lookup/4610.0Main+Features12004-05?OpenDocument>

Binsted, T. (2013) 'PrimeAg asset sale hits a snag'. *Australian Financial Review*. 16 May. http://www.afr.com/p/business/property/primeag_asset_sale_hits_snag_yr1oCejiufeZKqHDPG CbP

Boyce Chartered Accountants (2012) 'Australian Cotton Comparative Analysis'. *Cotton Research and Development Corporation*. http://crdc.com.au/wp-content/uploads/Publications/Boyce_CRDC-2012-Australian-Cotton-Comparative-Analysis.pdf

Brown, B. (2013) 'Sorting the wheat from the chaff'. *Australian Financial Review*. 15 May. http://www.afr.com/p/personal_finance/portfolio/sorting_the_wheat_from_the_chaff_ININv Dno5AxxhEwkyRkOIN

Commonwealth Bank Australia (2011) Commonwealth Bank Agri Indicators: 2nd Quarter, August <https://www.commbank.com.au/business/pds/agribusiness-index-report-2011Q2.pdf>

Cotton Australia (2014) *Submission to Energy White Paper Taskforce* <http://ewp.industry.gov.au/sites/ewp.industry.gov.au/files/Cotton%20Australia%20EWP%20sub mission%20final%20070214.pdf>

Cranston, M. (2011a) 'Prime Ag presses ahead'. *Australian Financial Review*. 23 July http://www.afr.com/p/business/companies/primeag_presses_ahead_PMk5zVY8JgyT3WT7sskz 8J

Cranston, M. (2011b) 'Rural sale of the century'. *Australian Financial Review*. 14 Nov http://www.afr.com/p/business/property/rural_sale_of_the_century_xLMrfJ1OxNfrSI7n5CpVzL

Cranston, M. (2012a) 'Swedes target farmland'. *Australian Financial Review*. 20 September http://www.afr.com/p/business/property/swedes_target_farmland_aG3c556ZcAqGq8vSCogcU N

Cranston, M. (2012b) 'AFF in \$20M cotton purchase'. *Australian Financial Review*. 23 April http://www.afr.com/p/business/property/aff_in_cotton_purchase_lesosfruC1Vs4fsNx1L96M

Cranston, M. (2012c) 'PrimeAg properties snapped up in \$36.7M deal'. *Australian Financial Review*. 28 May http://www.afr.com/p/business/property/primeag_properties_snapped_up_in_SKgSeWdZvFWS lzpit4iLYL

Cranston, M. (2012d) 'Laguna wants say in PrimeAg sale'. *Australian Financial Review*. 20 September http://www.afr.com/p/business/companies/laguna_wants_say_in_primeag_sale_1bKwDuJGYlz RFIBi6qaMUK

Cranston, M. and Thompson, S. (2011) 'Future Fund's rural play sours'. *Australian Financial Review*. 21 July http://www.afr.com/p/business/companies/future_fund_rural_play_sours_FgT3WVg1ExNtx0G7 DotaQL?hl

De Garis, S. (2013) *The Cotton Industry in Australia: An Analysis*. Presentation to the 19th Annual Pacific Rim Real Estate Society Conference Melbourne, 13-16 January http://www.prreres.net/papers/DeGaris_THE_COTTON_INDUSTR_%20IN_AUSTRALIA%20201 3.pdf

Eves, C. (2012) 'An analysis of NSW rural property market 1990-2010'. In *Proceedings of 18th Annual Pacific Rim Real Estate Society Conference*, Pacific Rim Real Estate Society (PRRES), Adelaide. <http://eprints.qut.edu.au/48606/>

Eves, C. And Painter, M. (2008) 'A Comparison of Farmland Returns in Australia, Canada, New Zealand and United States' *Proceedings of the RICS ROOTS rural research conference held*

on 17-18 March 2008, at Trinity College, Oxford

http://s3.amazonaws.com/zanran_storage/www.rics.org/ContentPages/34800521.pdf

Food and Agriculture Organisation (2014) *Food Price Index*

<http://www.fao.org/worldfoodsituation/foodpricesindex/en/>

Freed, J. and Thompson, S. (2010) 'Food and Fibre buys into PrimeAg'. *Australian Financial Review*. June 1 http://www.afr.com/Blogs/Opinion_Street%20Talk/Archive/201006#caefbbee-6c48-11df-a58d-c209f2c4f679

Herron Todd White (2012) National Rural Overview

http://www.htw.com.au/Industry_Presentations/Rural-Breakfast-2012.pdf

Houston, C. and Miller, R. (2011) 'Qatar land grab angers bush' *The Age* 19 June

<http://www.theage.com.au/victoria/qatar-land-grab-angers-bush-20110618-1g99l.html>

Keogh, M. (2012) 'An Overview of the Challenges and Opportunities Associated with Foreign Ownership and Investment in Australian Agriculture' *Australian Farm Institute*

www.ioa.uwa.edu.au/.../1Mick-Keogh-Keynote-address-speech.pdf

Kirk, L. (2008) 'Murray Darling Basin – A Living Landscape: Presentation to Geography Teachers Association of Victoria, December Conference' *Murray Darling Basin Authority*

http://www.gtav.asn.au/VCE/Regional_resources/Murray-Darling_Basin_water/Conferences/MDB_kirk_l1_38.pdf

Lau, B. (2009) 'Small cap investors come up smiling'. *Australian Financial Review*. 9

September http://www.afr.com/p/personal_finance/portfolio/item_BThy4RE9vpSBI4bwkJCtMJ

Lee, T. (2008) 'Boom market for grains as demand surges' *Australian Financial Review*. 21

January http://www.afr.com/p/national/item_WYPjWkptAbNAIDulQfZQAK

Manning, P. (2012) 'Agribusiness may be better off in private hands as shares lose lustre'.

Sydney Morning Herald, 10 November <http://www.smh.com.au/business/agribusiness-may-be-better-off-in-private-hands-as-shares-lose-lustre-20121109-293hq.html>

McKinna, D. (2012) 'Local Won't Invest in Agriculture' Opinion Piece, *Australian Financial Review*. 12 September

http://www.afr.com/p/opinion/locals_won_invest_in_agriculture_tZAUNsNC4wwGwWua1ebHRJ

Mitchell, J. (2013) 'PrimeAg sells remaining shares, Qld assets'. *Australian Financial Review*. 2 July

http://www.afr.com/p/business/companies/primeag_sells_remaining_shares_qld_ACLu8InkVvZ4ObjfmgMMO

Moir, B. (2011) 'Foreign investment and Australian agriculture'. *Rural Industries Research and Development Corporation*, Canberra, November

<https://rirdc.infoservices.com.au/downloads/11-173>

Morris, S. (2008) 'Bank activity rises in growth sector'. *Australian Financial Review*. 22 February

http://www.afr.com/p/national/item_q06siYP3IS3SMMxf8GKYJN

Morris, S. and Cranston, M. (2009) 'Seed capital makes hay on farm'. *Australian Financial Review*. 26 October

http://www.afr.com/p/national/seed_capital_makes_hay_on_family_KeZP3UgJZ075dGFzR3vKvN

Murray Darling Basin Authority (2010a) *Namoi-Region metadata*

www.mdba.gov.au/kid/files/Namoi-Region.xls

Murray Darling Basin Authority (2010b) *Gwydir-Region metadata*

www.mdba.gov.au/kid/files/Gwydir-Region.xls

- Murray Darling Basin Authority (2010c) *Condamine - Region metadata*
www.mdba.gov.au/kid/files/Condomine-Balonne-Region.xls
- Murray Darling Basin Authority (2010d) *Border River - Region metadata*
www.mdba.gov.au/kid/files/Border-River-Region.xls
- Murray Darling Basin Authority (2012) *Annual Report 2011 – 12*
http://www.mdba.gov.au/annualreports/2011-12/chapter_04_4.html
- National Water Commission (2011) *Water Trading in the Cotton Industry*
http://archive.nwc.gov.au/_data/assets/pdf_file/0011/19883/Industry-case-study_Cotton.pdf
- Prime Agriculture Australia Limited (2007-13) Annual Reports and Company Announcements
<http://primeag.com.au/home/news/>
- PrimeAgriculture Australia Limited (2007a) Prospectus
<http://primeag.com.au/agriculture/prospectus/>
- Thompson, S. and Mercer, K. (2011) 'Shareholder doubts Stymie PrimeAg play'. *Australian Financial Review*. 21 July
http://www.afr.com/p/opinion/shareholder_doubts_stymie_primeag_qY4WzZsjQNRdKhDu0dZWil
- Thompson, S., Shore, S. and MacDonald, A. (2012) 'Corish takes the strain at PrimeAg'. *Australian Financial Review*. 1 March
http://www.afr.com/p/opinion/corish_takes_the_strain_at_primeag_tiTYxhsy09zqng40BzhZkM
- Thompson, S., Lacy, C. and Shore, S. (2011) 'Rural land funds flavour of the day'. *Australian Financial Review*. 9 November
http://www.afr.com/p/opinion/rural_land_funds_flavour_of_the_G6BXQPAwAJNWMo6bSHEJK
- US Department of Agriculture (2013) Australian Cotton and Products Annual –Market Reports – The Crop Site <http://www.thecropsite.com/reports/?id=1859>
- Whyte, J. 2010 'Agribusiness suitors flourish'. *Australian Financial Review*. 27 October
http://www.afr.com/p/markets/agribusiness_suitors_flourish_HiY9JosJWVO3hco4j7UP5H

Appendix 1: PAG Income Statements, 2008-2013

	2007/08	2008/09	2009/10	2010/11	2011/12	2012/13	2007/08-2011/12 Av	5 Year Average
Continuing Operations								
Sale of goods	5,682	33,903	33,241	42,638	58,348	75,700	34,762	41,585
Rendering of services	13						13	13
Other revenue (<i>mainly interest</i>)	5,742	1,772	569	654	6,452	5,687	3,038	3,479
Revenue	11,437	35,675	33,810	43,292	64,800	81,387	37,803	45,067
Net operating income derived from biological assets	6,950	28,485	30,898	51,412	56,602	44,738	34,869	36,514
Cost of Sales	-4,268	-28,372	-32,457	-41,229	-55,967	-73,787	-32,459	-39,347
Other income (<i>mainly gains on forward contracts sold/insur</i>)	1,032	1,800	173	5,058	542	1,285	1,721	1,648
Employee expenses	-1,571	-4,355	-4,523	-4,775	-5,974	-6,188	-4,240	-4,564
Depreciation and amortisation expense	-347	-1,496	-1,871	-2,172	-2,495	-2,563	-1,676	-1,824
Farming costs	-7,722	-28,391	-26,359	-36,674	-42,692	-31,767	-28,368	-28,934
Property related costs	-736	-1,398	-1,572	-1,717	-1,893	-3,647	-1,463	-1,827
Flood damage	-500	-		-2,368	-138	-17	-1,002	-756
Administrative and other expenses	-1,412	-2,183	-1,641	-1,357	-1,977	-5,176	-1,714	-2,291
Finance costs	-60	-164	-1,099	-1,025	-424	-659	-554	-572
Costs	-16,616	-66,359	-69,522	-91,317	-111,560	-123,804	-71,075	-79,863
Profit from farming operations before income tax	2,803	-399	-4,641	8,445	10,384	3,606	3,318	3,366
Fair value on land, buildings and improvements and water rights impairment expense		-5,828	-3,546	1,622	-3,234	-30,504	-2,747	-8,298
Profit from continuing operations before income tax	2,803	-6,227	-8,187	10,067	7,150	-26,898	1,121	-3,549
Income tax (expense)/benefit	-848	1,902	2,462	-3,034	-2,159	-4,083	-335	-960
Net profit for the period after tax	1,955	-4,325	-5,725	7,033	4,991	-30,981	786	-4,509

Appendix 2: Key Shareholders, 2008-2013

Year	Shareholder	Percent Shares
30 June 2008	1. IOOF Holding Ltd	9.97
	2. Ellerston Capital Ltd	9.97
	3. AusbilDexia Ltd	7.73
	4. Orion Asset Management	6.67
	4. Kinetic Investment Partners Ltd	5.03
30 June 2009	5. Westpac Banking Corporation	5.02
	1. Altima One World Fund Ltd	11.85
	2. IOOF Holding Ltd	11.34
	3. Orion Asset Manangement	8
	4. AusbilDexia Ltd	7.75
30 June 2010	5. Washington H Soul Pattinson	5.24
	1. Guinness Peat Group	16.94
	2. IOOF Holding Ltd	11.30
	3. AusbilDexia Ltd	7.72
	4. Australian Food and Fibre	6.95
	5. Washington H Soul Pattinson	5.22
30 June 2011	6. UBS AG	5.04
	1. Guinness Peat Group	11.54
	2. Australian Food and Fibre	11.20
	3. AusbilDexia Ltd	6.73
	4. IOOF Holding Ltd	6.61
	5. JCP Investment Partners	6.32
30 June 2012	6. Orion Asset Management	5.74
	1. Guinness Peat Group	11.57
	2. Australian Food and Fibre	11.20
	3. AusbilDexia Ltd	6.73
	4. IOOF Holding Ltd	9.07
	5. JCP Investment Partners	7.97
	6. Regal	5.31
7. UBS AG	6.60	
30 June 2013	1. Belfort Investments Ltd	16.4
	2. Australian Food and Fibre	11.2
	3. GEM	8.2
	4. UBS AG	5.5
	5. Regal	5.3
	6. Select Asset Management	5