



**National Farmers'**  
F E D E R A T I O N

**PRICING AND SUPPLY ARRANGEMENT IN THE  
AUSTRALIAN AND GLOBAL CHEMICAL AND  
FERTILISER MARKETS**

**NFF SUBMISSION**

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# The National Farmers' Federation

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The National Farmers' Federation (NFF) was established in 1979 and is the peak national body representing farmers, and more broadly agriculture across Australia.

The NFF's membership comprises of all Australia's major agricultural commodities. Operating under a federated structure, individual farmers join their respective state farm organisation and/or national commodity council. These organisations collectively form the NFF.

Each of these state farm organisations and commodity councils deal with state-based 'grass roots' issues or commodity specific issues, respectively, while the NFF represents the agreed imperatives of all at the national and international level.

## Introduction

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The NFF welcomes the opportunity to provide input into the Senate Select Committee on Agriculture and Related Industries, regarding the pricing and supply arrangements in the Australian and global fertiliser and chemical markets and related matters.

In response to this issue, the NFF surveyed its members, finding that in just the past 12 months, fertiliser prices increased, on average, by 107%. Similar price increases for chemical prices have also been experienced during the same period. The increase in fertiliser prices are particularly perplexing for farmers considering that approximately 75% of the key fertiliser ingredients of nitrogen, potash and phosphate are imported<sup>1</sup> and that the Australian dollar has appreciated by almost 15% against the Greenback since the beginning of 2007.

The higher fertiliser and chemical prices are eating into the margins of farmers and come on top of a growing list of additional input costs being faced by the farm sector. This is forcing farmers to adjust their production systems, often at the expense of productivity.

The NFF acknowledges research that identifies a multitude of global demand and supply factors as the drivers behind fertiliser and chemical price rises, however we believe it is also prudent to also examine domestic market competition issues. It must be demonstrated that rationalisation in the fertiliser supply market, particularly on the east coast of Australia, is not leading to excessive profiteering in the sector at the expense of Australian farmers.

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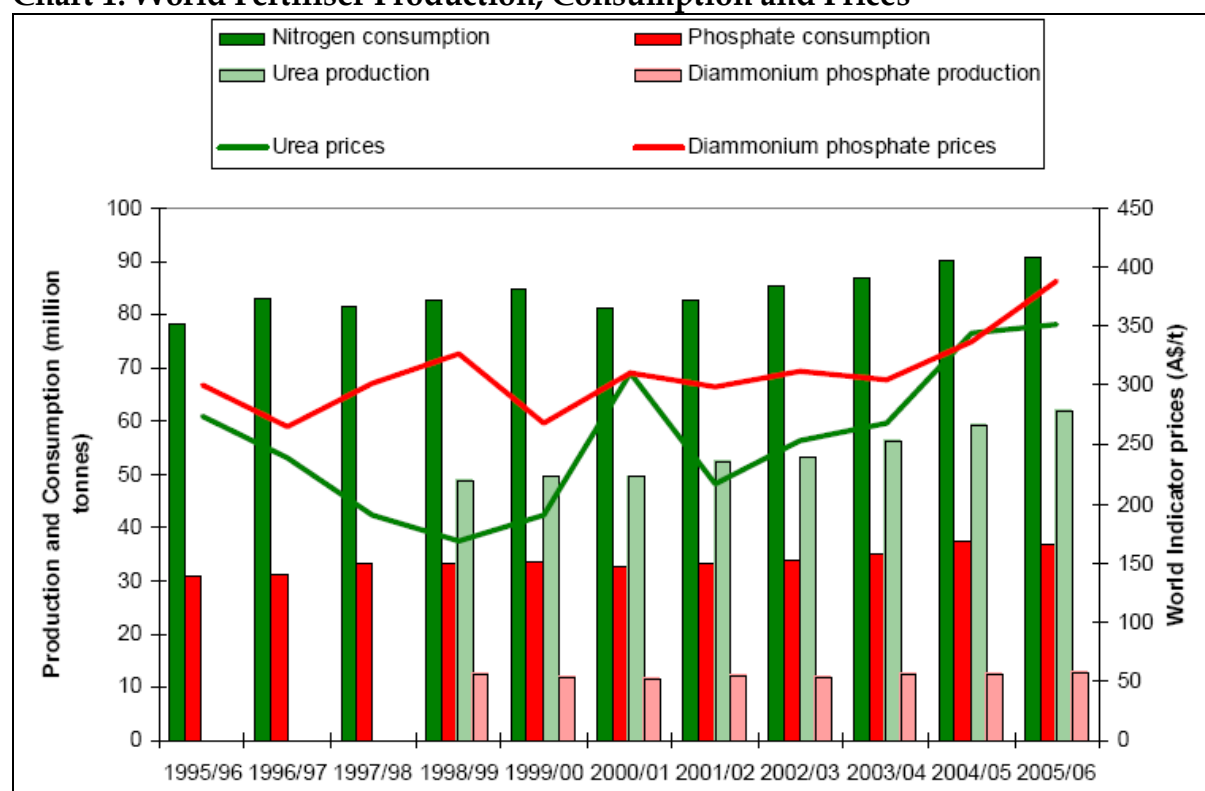
<sup>1</sup> ABARE 2007, 2007 *Australian Commodity Statistics*

## Fertiliser and chemical supply and pricing issues

The main fertilisers used in Australia are Urea, Diammonium Phosphate, Mono-ammonium Phosphate, Single Superphosphate, Ammonium Sulphate and Potassium Chloride.<sup>2</sup> The major chemical is Glyphosate.

The role of fertiliser and chemicals in supporting the continued growth in agricultural production is well established. Over the past 30 years, a positive correlation has been made between grain production and fertiliser use. Chart 1 demonstrates that there has been a steady increase in the consumption of nitrogen and phosphate over the past 10 years.

**Chart 1: World Fertiliser Production, Consumption and Prices<sup>3</sup>**



The NFF notes that there are a number of factors that have driven the price of fertilisers and chemicals upwards in recent years.

<sup>2</sup> Fertilizer Industry Federation of Australia Inc (FIFA) 2005 *Fertilizer Industry Environment*

<sup>3</sup> International fertiliser Industry Association <http://www.fertilizer.org/ifa/default.asp>

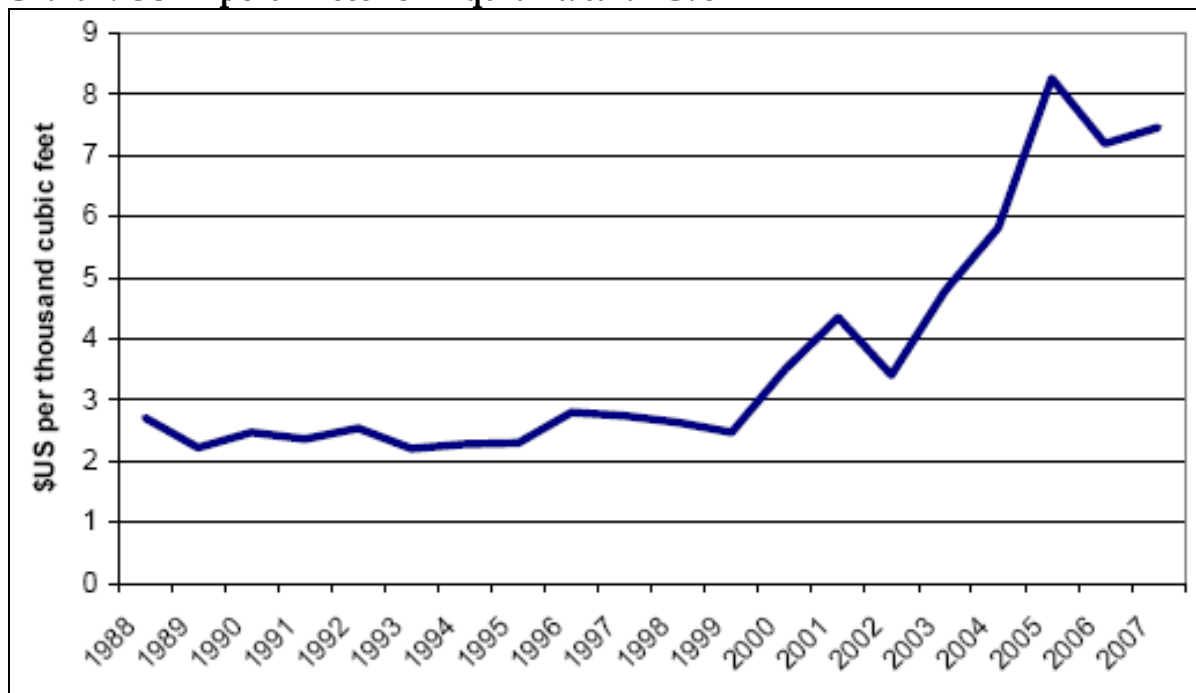
## *Key drivers of global fertiliser and chemical prices:*

### *Increasing global liquid natural gas prices*

Liquid natural gas is one of the main components in ammonia production. Around 97% of the world's nitrogen fertilisers are derived from synthetically produced ammonia. Ammonia is produced using the 'haber process' with the nitrogen component derived from the air and the hydrogen component usually derived from natural gas although other sources include crude oil, coal or water. Between 70-90% of the production cost of nitrogen fertiliser is the cost of natural gas.<sup>4</sup>

Chart 2 shows a time series for liquid natural gas import prices into the United States. Since 2002, prices have dramatically increased, with a minor correction in 2006. Australia is a net exporter of natural gas.

**Chart 2: US Import Prices for Liquid Natural Gas<sup>5</sup>**



### *Growing world population*

It is anticipated that between 50 and 70 million people will be added annually to the world population until the mid 2030's.<sup>6</sup> The growing world population has resulted in an increase in production requirements from limited agricultural land. As a consequence of higher production, demand for fertilisers and chemicals has also risen accordingly.

<sup>4</sup> USDA April 2006 *Agriculture and Rural Communities Are Resilient to High Energy Costs*, Amber Waves

<sup>5</sup> Energy Information Administration <http://www.eia.doe.gov/>

<sup>6</sup> Food & Agriculture Organisation of the United Nations (FAO) 2008, *Current world fertilizer trends and outlook to 2001/12*

As the population increases, population dwelling centres also expand in size. This in turn places pressure on fertile agricultural land, forcing more marginal land to be utilised for food and fibre production and therefore a greater reliance on such agricultural inputs.

### *High agricultural commodity prices*

High commodity prices experienced over recent years has led to increased production and therefore greater fertiliser consumption. Some observers are now referring to a paradigm shift in agriculture away from decreasing real food prices over the past thirty years.<sup>7</sup>

The NFF notes the monthly *Westpac-NFF Commodity Index*, measuring the price of global agricultural commodity prices, has lifted by over 25% in the past year and is now at its highest level on record.

### *Income growth in developing countries*

Income growth in developing countries and the subsequent increase in the wealth of these countries is also contributing to the increased demand for fertilisers and chemicals.

As a result, much of the trebling in agricultural output in real terms since 1961 (far exceeding global population growth) has originated in developing countries and also reflects the rising share of high-value commodities such as livestock and horticulture products in the total value of production.<sup>8</sup>

As incomes increase, it becomes possible to purchase more costly inputs that assist in production. Consumption of fertilisers has also shifted towards developing countries, particularly in the Asian region as demonstrated by Chart 3.

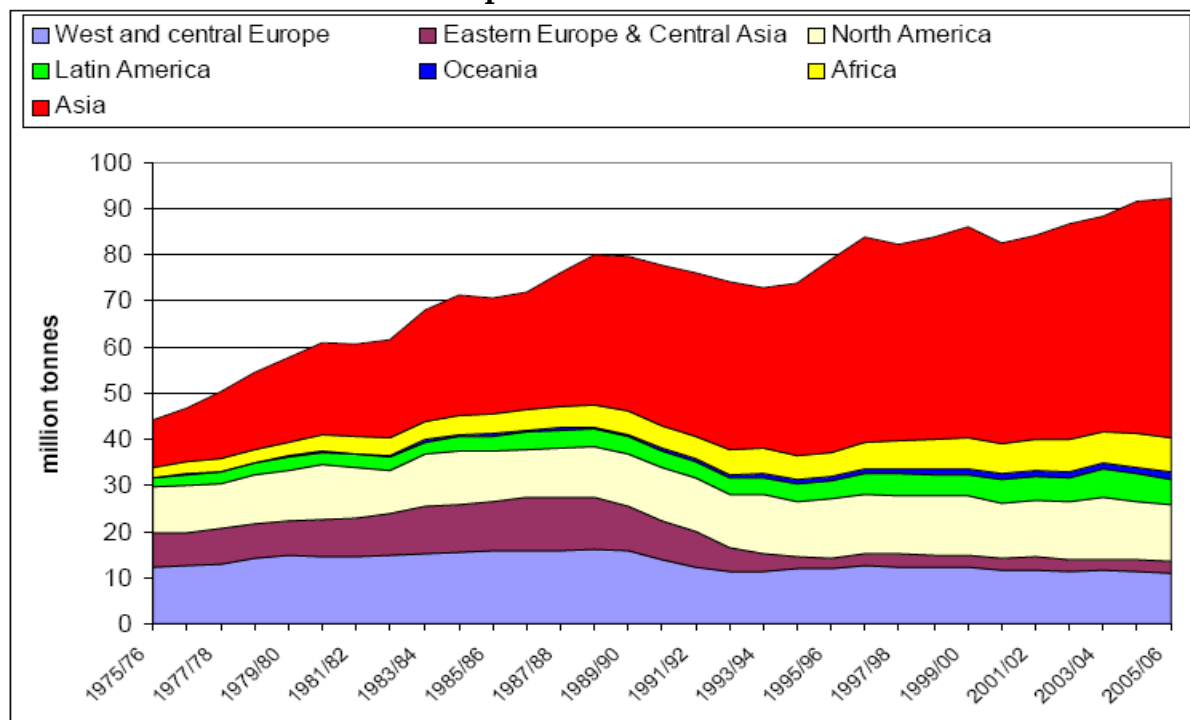
However, although the largest percentage increase in fertiliser consumption has taken place in the developing world, their fertiliser usage in kilograms per hectare is lower than other developed regions such as the European Union and North America. Australia uses less fertiliser per hectare than these regions due to the relatively arid climate which only permits low levels of fertiliser usage.

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<sup>7</sup> FAO 2008, *Current world fertilizer trends and outlook to 2001/12*

<sup>8</sup> FAO 2008, *Current world fertilizer trends and outlook to 2001/12*

**Chart 3: World Fertiliser Consumption<sup>9</sup>**



### *Changing global diets*

Income growth, relative price changes, urbanisation and shifts in consumer preferences have all contributed to altering dietary patterns, particularly in developing countries.

It has been widely reported that increasing affluence in developing countries has led to increased demand for animal protein, vegetable oils and fruits and vegetables and a reduction in the traditional grain-based diets in these regions.

With a kilo of animal protein needing between two and eight times the same volume of grain to produce, this has led to a significant increase in demand for grain globally.<sup>10</sup>

### *Biofuels*

The increase in demand for ethanol and other biofuels is placing an increased demand on agricultural products, particularly grain, sugar and oilseeds. Growing corn more intensively is yet another approach. In regions such as North America and Europe a combination of policies such as mandated renewable fuel use in gasoline, production subsidies, Methyl Tert-butyl Ether (MTBE) bans and border protection has seen exponential growth in demand for biofuel inputs.

<sup>9</sup> International fertiliser Industry Association <http://www.fertilizer.org/ifa/default.asp>

<sup>10</sup> Wahlquist A February 09, 2008, *Investors start to buy back the farm*, The Australian

To meet this demand, farmers have looked to increase production of products such as corn, through increasing yields or replacing alternative crops such as soybean. For instance, some producers who currently pursue a corn-soybean rotation (planting corn one year and soybeans the next) might shift to a corn-corn-soybean rotation. Continuous production of corn is another possibility.<sup>11</sup>

With such practices occurring in the United States in particular, the past three years has seen the area planted to corn increase by 15%.<sup>12</sup> With corn being a more 'input hungry' crop, requiring on average approximately 32 times more nitrogen per acre than the equivalent area of soybean, significantly more fertiliser is needed as a result.<sup>13</sup>

### *GM crops*

Monsanto's "Roundup Ready" crops have been genetically engineered to permit direct application of the herbicide Glyphosate so as to be able to kill nearby weeds without killing the crops.<sup>14</sup> In the United States, the widespread adoption of Roundup Ready crops has driven a more than 15-fold increase in the use of Glyphosate on major field crops from 1994 to 2005.<sup>15</sup>

### *Supply disruptions in China*

In a bid to host a 'Green Olympics' Beijing has reportedly undertaken environment initiatives to clean up the city. Polluting factories, including several small Glyphosate manufacturers around Beijing, have been moved or closed as well as the shutting down of the biggest Glyphosate manufacturer of Mengshan. The NFF is unsure of what impact this has had on global supplies.<sup>16</sup>

The NFF also notes that there has also recently been a reduction in the Chinese Value-Added Tax Subsidy (VAT) for several export products. The VAT for Glyphosate reduced from 11% to 5% which has increased export prices of that product.

## Domestic competition issues

It is prudent to examine the effect of increased rationalisation within the fertiliser supply market, particularly on the east coast of Australia, on the prices offered to Australian farmers. Much of the focus within this element of the debate has centred on the operation of Incitec Pivot due to various mergers and acquisitions that have taken place in recent times.

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<sup>11</sup> USDA, *Ethanol Reshapes the Corn Market*, [www.ers.usda.gov/AmberWaves/April06/Features/Ethanol.htm](http://www.ers.usda.gov/AmberWaves/April06/Features/Ethanol.htm)

<sup>12</sup> Sourced from USDA <http://www.fas.usda.gov/psdonline/psdQuery.aspx>

<sup>13</sup> Rabobank 2007, *Rabobank Global Focus – Fertiliser – a precious commodity*

<sup>14</sup> Sourcewatch Encyclopaedia, *Monsanto and the Roundup Ready Controversy*, <http://www.sourcewatch.org>

<sup>15</sup> Friends of the earth international, Jan 2008, *Who benefits from GM crops?* Issue 112

<sup>16</sup> NSW Farmers Association, Feb 2008, *Chemical Prices*

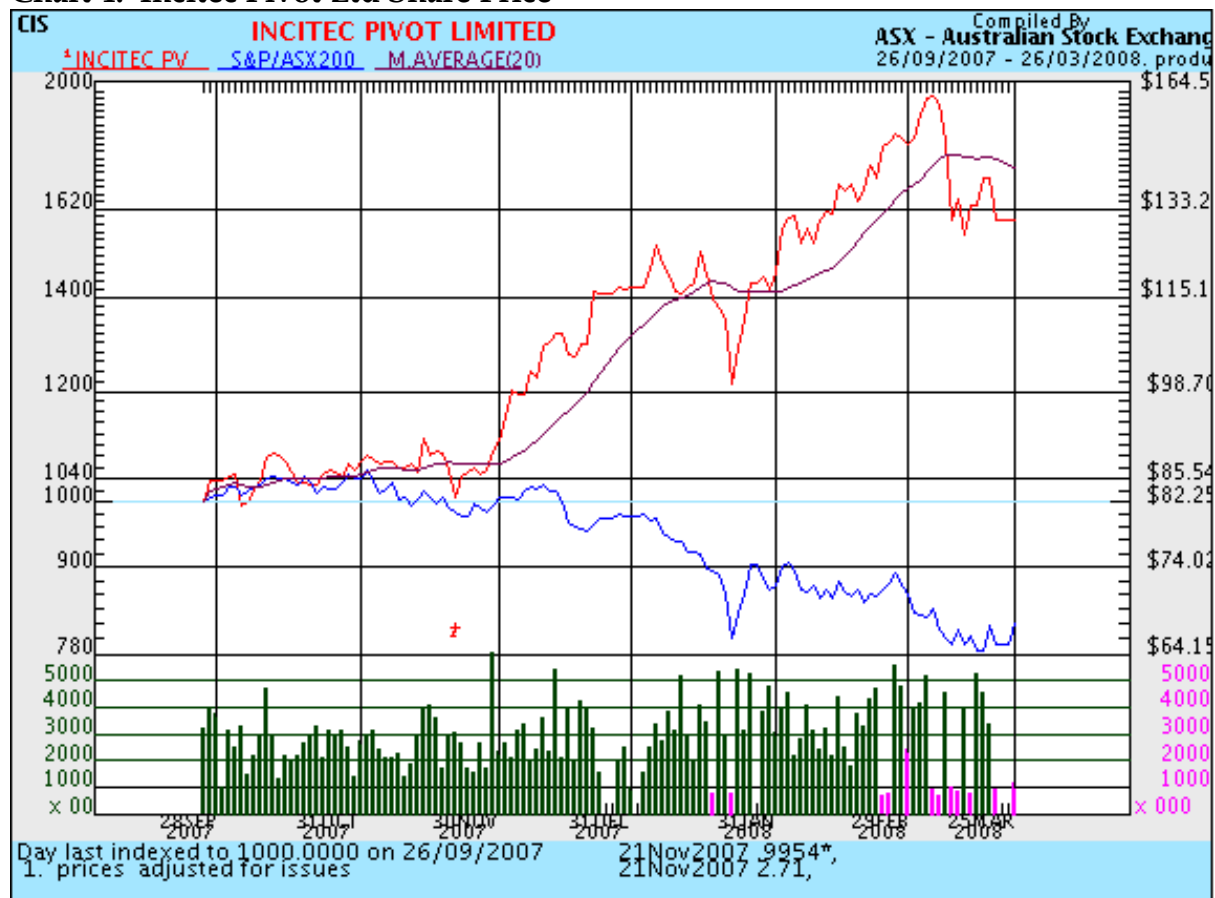


Rationalisation of the east coast fertiliser market has undoubtedly played a part in the success of Incitec Pivot in recent years. Incitec Pivot was created by the merger of Incitec and Pivot in June 2003, with a further increase in scale and production capacity coming in August 2006 with the purchase of Southern Cross Fertilisers. More recently, Incitec Pivot announced the further acquisition of Dyno Nobel an explosives manufacturer and supplier that also is involved in the North American fertiliser market.

Incitec Pivot is the now dominant manufacturer and supplier of fertiliser to farmers in Australia's eastern and southern states supplying more than 50% of Australia's total agricultural plant nutrient needs.<sup>17</sup>

Recently, Incitec Pivot announced that it anticipated their 2008 earnings, before interest and tax (EBIT), would be in the range of \$700 million to \$730 million. This amounts to an increase of up to 135% on 2007.<sup>18</sup> The increased profits and positive forward prospects are clearly reflected by the more than 80% increase in the Incitec Pivot Limited share price since November 2007 (see Chart 4).

**Chart 4: Incitec Pivot Ltd Share Price**



<sup>17</sup> Incitec Pivot Website, <http://www.incitecpivot.com.au/>

<sup>18</sup> Incitec Pivot 6 March 2008 ASX Announcement

While the NFF urges the Australian Government to keep a close watch on how market rationalisation is influencing the end-price paid to farmers, we acknowledge that Incitec Pivot does have competition in most regions.

Indeed, we understand that there are approximately nine Australian fertiliser manufacturers and 14 distributors. The NFF member surveys support this, showing that on average, farmer survey participants had 3.3 distributors in their local region. However, it should be recognised that while there are multiple suppliers/distributors in each region NFF members understand that in most areas there are only a limited number of fertiliser companies who supply these distributors. E.g.: There are seven stores in Bundaberg that sell fertiliser. Six of these sell Incitec Pivot and one sells Summit fertiliser. In addition, the NFF has been informed that Summit also sources some of its fertiliser from Incitec Pivot.

Approximately 9% of NFF survey participants also stated that they had only one fertiliser distributor in their local region. It is these situations that particularly concern the NFF, as there is a greater potential for excessive profiteering and price gouging due to monopolistic pressures.

The NFF also points to the CANEGROWERS Isis submission which outlined the efforts of CANEGROWERS to facilitate bulk orders. Despite such efforts, the fertiliser companies were not prepared to enter into any arrangement with the knowledge that growers had limited alternative options besides buying the fertiliser at the prices offered.

The NFF hopes that the Australian Government will undertake further analysis on these concerns. In saying this, the NFF recognises that there may be benefits in rationalisation and expansion in delivering efficiencies that lead to potential cost reductions. However, the NFF realises that with such rationalisation, such as that in the east coast fertiliser market, competition issues can also arise. The correct balance between supply-chain rationalisation and market power must be attained.

## Implications for Australian farmers

### *Eroding margins for farmers*

Agriculture is experiencing a rapidly increasing cost-base that is eroding margins and adding to the risk profile of the sector. On top of fertiliser and chemical prices, which comprise between 11% and 14% of total farm cash costs<sup>19</sup> and have more than doubled in the past 12 months, additional cost increases faced by agriculture include:

- Labour wage rates have lifted on the back of 30 year lows in unemployment;

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<sup>19</sup> ABARE Dec 2007 *Australian Commodities – December quarter, 07.04*

- Fuel prices have quadrupled since 2003, recently punching through the US\$100/barrel level; and
- Official interest rates have lifted by 3% since 2002 (these have been combined with unilateral increases in rates issued by the major banks).

Combined, these factors comprise over 56% of total farm cash costs.<sup>20</sup>

On top of these input costs, the Australian dollar has appreciated by over 60% since 2003. With 70% of all Australian agricultural production destined for export markets, this has made it significantly more difficult for Australian farmers to compete on global markets.

### *Changing farm practices*

The high and increasing cost of fertiliser and chemicals are forcing Australian farmers to reconsider their production methods and crop varieties. In recent years Australian farmers have increasingly utilised zero/minimum till cropping techniques. Improved soil structure, reduced water run-off, better soil moisture retention are all advantages of adopting zero/minimum till practices and have been key contributors to profitability and sustainability for the sector.<sup>21</sup>

However, to effectively utilise conservation tillage practices and manage weeds, the fields must generally be prepared for planting by killing the previous crop with chemicals. With the current high price of chemicals, Australian farmers are now considering moving back to cultivation practices.

The rising prices are also leading farmers to reconsider their crop varieties, moving away from 'high input' crops such as corn. There is also significant, as yet untapped, potential for using genetic modification to enhance the ability of crops to absorb and use fertiliser. More work can also be done to examine more effective ways for fertiliser application that minimise waste and the NFF hopes that the current high prices will provide incentive for further innovation in such areas.<sup>22</sup>

NFF survey participants also indicated that they are seriously reconsidering current production mixes. One farmer stated that "questions need to be asked whether it is viable to spread on pasture just for beef, wool, sheep production."

## **NFF fertiliser survey results**

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Below is a summary of an NFF member survey of 226 farmers on the issue of fertiliser supply.

<sup>20</sup> ABARE Dec 2007 *Australian Commodities – December quarter, 07.04*

<sup>21</sup> Excel Agriculture, <http://www.excelagr.com.au>

<sup>22</sup> Rabobank 2007, *Rabobank Global Focus – Fertiliser – a precious commodity*

## **Types of fertiliser purchased**

The majority of respondents use Diammonium Phosphate (DAP), Urea, Single Superphosphate (SSP) and Mono-ammonium Phosphate (MAP). There is also extensive use of manures where farmers are closely located to feedlots and/or other intensive livestock production facilities.

- Diammonium Phosphate - 71 %
- Urea - 47%
- Mono-ammonium Phosphate- 47%
- Single Superphosphate- 28%
- Lime - 2%

## **Fertiliser distributors (in local region)**

On average, the farmers surveyed had access to 3.3 fertiliser distributors (range from one to eight)

- 9% of farmers recorded having one distributor in their area.
- 54% of farmers recorded having two - three distributors in their area.
- 30% of farmers recorded having four - five distributors in their area.
- 7% of farmers recorded having six or more distributors in their area.

It should be recognised that while there are multiple suppliers/distributors in each region NFF members understand that in many areas there are only two or three fertiliser companies who supply these distributors.

## **Supply availability issues**

A list of availability issues were noted by survey participants. Responses varied from “none”, to “difficult or poor”, to “no guarantees”. Where supply availability had been listed as being an issue, this had only become apparent in the past few months and some producers complained that they only received the product at a sub-optimal time for application. Some survey respondents also felt that suppliers were not fulfilling their contracted orders so that the agent could reallocate this fertiliser to an uncontracted buyer and get a higher price. Other noted that they had no problems with availability but were not offered a price at the time of ordering.

## **Price increase amount**

On average, respondents indicated that their fertiliser prices had increased by 107%, or by over \$500/tonne over the past 12 months. DAP appears to be the most highly affected both in terms of supply issues and price increases over recent months.

## **Reasons given for price increase**

The vast majority of respondents were aware of the global supply and demand issues that are influencing fertiliser prices, and believed these to be the predominant reason for the price increases. Many respondents had been informed by their suppliers that specific global drivers of prices included increased demand due to biofuels production, increased cropping (India, China, US, Pakistan), plant closures in China for clean air for the Olympics, rejected shipments due to contamination, and manufacturing plant break downs or closures.

Additionally, farmers stated that in some instances there was a lack of communication between agents and manufacturers resulting in insufficient supplies. There were also a number of respondents who were concerned that supplies were being artificially and deliberately shortened in order to drive prices up. Further elements of concern to respondents included suggestions that contracts were not being honoured despite some instances where payment had been made some months earlier and other issues surrounding a lack of competition in some areas.

Costs were also listed by respondents as a reason given by agents and manufacturers for the increased prices. These included higher oil costs, transportation costs (shipping and domestic), and a shortage of sea transport capacity.

### **Notable quotes by respondents**

- "Worrying when stocks have been in store, as witnessed by truck drivers, but not released until price rise - the high Aussie dollar should make the product cheaper not dearer"
- "Look into who is making profit from fertiliser and how much profit and is it justified?"
- "Everything is going up and interest rates are up so ever things goes up"
- "All companies distributing fertilizer need to get their act together. Fertilizer needs to be brought into Australia a lot earlier. Everyone knows what time of the year farmers start seeding."
- "With these high prices a below average year will be a disaster. Farmers won't be able to make profits unless high grain prices continue."
- "We tried to secure fertilizer prices + tonnages in Dec 2007 but couldn't get any solid information or fixed prices"
- "Seems to be too big of an increase in 1 year. So much so we cut back our tonnage."

## **Conclusion**

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The NFF understands that fertiliser and chemical prices have lifted globally on the back of factors such as biofuels, economic growth in developing countries and increasing fuel prices. As a result, Australian farmers have experienced a more than doubling of this input cost component, which is eating into profit margins and forcing farmers to change their production practices.

However, while a number of demand and supply factors are undoubtedly playing a role in the recent price lift, it is prudent to examine the impact that domestic supplier rationalisation has had on prices. Approximately 9% of farmers surveyed by NFF member organisations are now confined to a single supply source, thus exposing them to market power issues. We hope that the Senate Select Committee on Agriculture and Related Industries will undertake further analysis in this area.

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