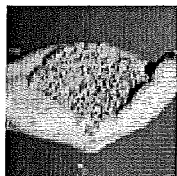


EUREKA *report*



Phosphate's promise

By Michael Feller

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PORTFOLIO POINT: Phosphate, a key fertiliser input, is concentrated in some of the world's most geopolitically unstable countries. Amidst a global food crisis Australian supplies will be placed at a premium.

As Australia slept on Tuesday night, 100 protestors invaded an ugly administrative block in a Khouribga in central Morocco, breaking windows, setting fire to company vehicles and destroying equipment.

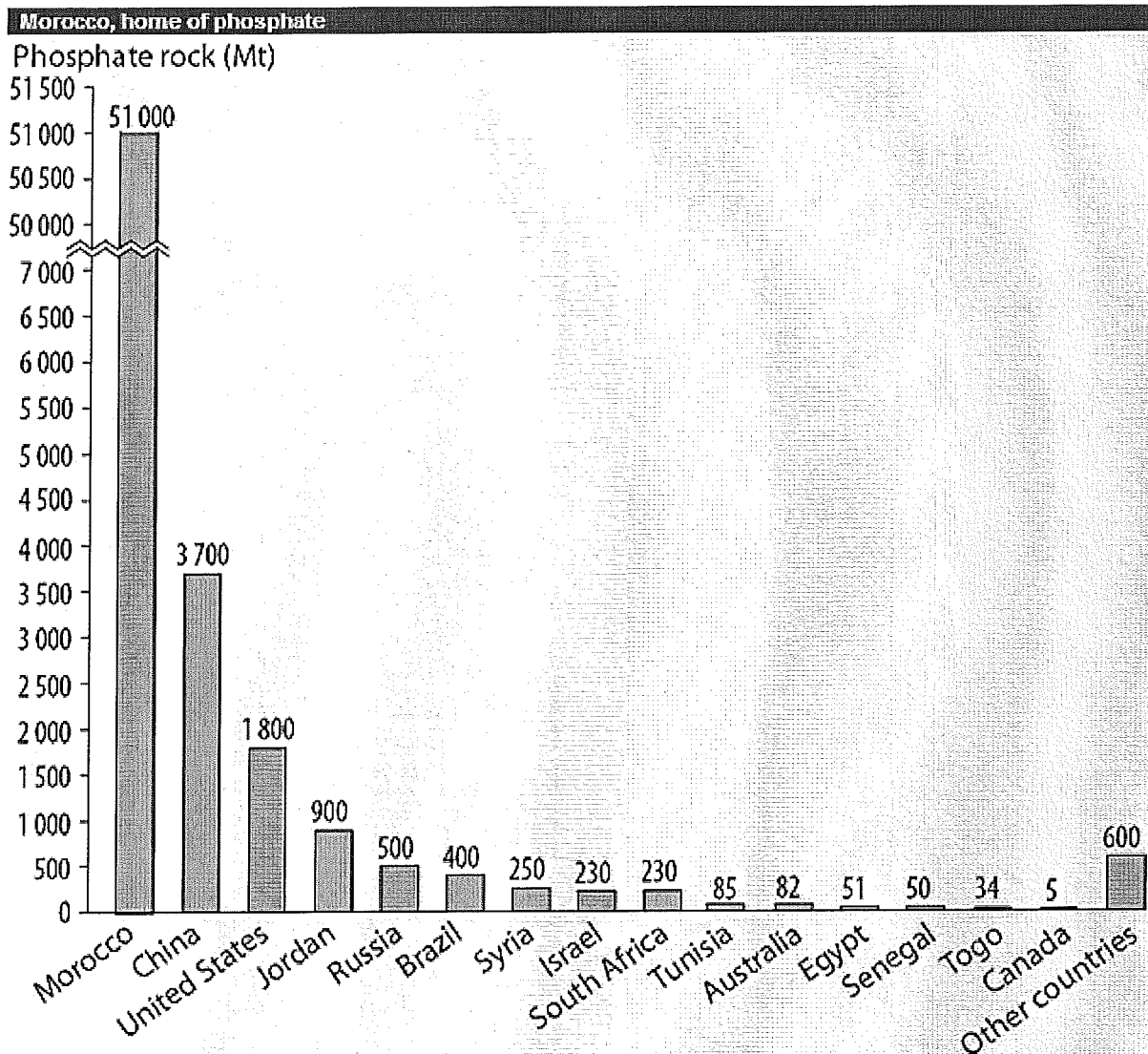
The scene was not unlike the uprisings for political reform that have played on television screens from elsewhere around the region, but this riot was different. Its fury was aimed at OCP Group, the Moroccan state-owned phosphate monopoly. And as anyone who knows a thing or two about phosphate will tell you, this bodes poorly for future food prices.

Far to the southwest lies the enormous Bou Craa deposit which accounts for roughly 10% of Morocco's total production of the mineral and is used in producing diammonium phosphate (DAP), one of the most commonly used fertilisers worldwide alongside two other popular compounds, monoammonium phosphate (MAP) and triple superphosphate (TSP).

The use of phosphate in fertiliser is a relatively modern farming practice. In 1960 the world used 9 million tonnes per annum. By 2000 that had grown to 40 million tonnes. The International Fertiliser Industry Association projects that use to increase to 44 million tonnes by 2014.

(Total fertiliser use is closer to 169 million tonnes per annum if one includes the nitrogen included in DAP, MAP and TSP. And that, in turn, is projected to increase to 187.3 tonnes in total by 2014.)

Unfortunately for the growing legions of middle-class consumers around the world, Bou Craa is not located within the borders of Morocco but in the occupied territory of Western Sahara, the scene of a long-running but little-reported war that's been running since the 1970s, contributing to Morocco's massive phosphate reserves.



Source: *UN Environmental Programme (UNEP) 2011 Yearbook, International Fertilizer Development Center data*

Morocco's geological abundance of phosphate, recently revised by an International Fertiliser Development Center report, means that worries of 'peak phosphate' are probably overblown. The United Nations Environment Program believes that, based on current consumption, the world has enough phosphorous for 300–400 years.

The problem here isn't one of scarcity but stability.

According to investment bank **Nomura**, Morocco is the world's second-most vulnerable nation in terms of food inflation. Based on Nomura's 'Food Volatility Index Score', Morocco, at 101.3, tops out Tunisia, at number 18, Egypt, in sixth-position, and Libya, at 16th. And while those three North African nations have been dominating headlines in recent months, Morocco hasn't exactly been serene with more than a month of violent protests in Rabat, Casablanca and Marrakesh.

Ironically for a country so critical to the international fertiliser supply chain, Morocco, indeed, almost invented the concept of modern Middle Eastern food riots. Its infamous Bread Intifada of 1984 and a weekend of food riots in 1990, in which 33 people were killed, arguably inspired the events in Tunisia which have led to this year's so-called Arab Spring.

Morocco is vulnerable in other ways as well.

The country tops a Reuters "uprising index", beating all others in the Middle East bar Sudan, which recently saw its southern portion break-away and where there is still fighting in Darfur. According to the index Morocco has all the elements – inflation, unemployment, corruption and mobile phones – that make a country volatile. And before the concept of the "Facebook revolution", Morocco led the way, with mass protests in 2008 when a

man was jailed for impersonating King Mohammad's younger brother on the online social network.

The Reuters 'Uprising Index'									
Country	Absolute Values				Normalized Values (0=10) Where 10 is Likely for Uprising				
	2010 Transparency International Corruption Perception Index Score	2010 Magma Food Volatility Index Score	2010 Freedom House Freedom in the World Score	2009 I.T.U. Est. Internet Users per 100 Inhabitants*	2010 Transparency International Corruption Perception Index Score	2010 Magma Food Volatility Index Score	2010 Freedom House Freedom in the World Score	2009 I.T.U. Est. Internet Users per 100 Inhabitants*	Score
Sudan	1.6	100.9	7	10.16	1.0	0.9	1.0	0.1	0.75
Nigeria	2.4	101.2	4.5	28.43	0.9	0.9	0.7	0.3	0.73
Azerbaijan	2.4	100.8	5.5	27.4	0.9	0.9	0.8	0.3	0.72
Morocco	3.4	101.3	4.5	41.3	0.6	1.0	0.7	0.5	0.72
Uzbekistan	1.6	100.3	7	12.06	1.0	0.6	1.0	0.2	0.69
Venezuela	2.0	100.4	4.5	31.2	1.0	0.7	0.7	0.4	0.69
Russia	2.1	100.3	5.5	29	1.0	0.6	0.8	0.4	0.69
Libya	2.2	100.6	7	5.51	0.9	0.8	1.0	0.0	0.68
Algeria	2.9	101.3	5.5	13.47	0.8	1.0	0.8	0.1	0.67
Egypt	3.1	101	5.5	24.26	0.7	0.9	0.8	0.2	0.67
Angola	1.9	100.8	5.5	3.28	1.0	0.9	0.8	0.0	0.67
Lebanon	2.5	101.2	4	23.68	0.8	0.9	0.7	0.2	0.67
Vietnam	2.7	100.4	6	26.55	0.8	0.7	0.9	0.3	0.66
China	3.5	100.4	6.5	28.9	0.6	0.7	0.9	0.4	0.65
Tunisia	4.3	100.9	6	34.07	0.5	0.8	0.9	0.4	0.65
Pakistan	2.3	100.6	4.5	11.3	0.9	0.8	0.7	0.1	0.64
Belarus	2.5	100.1	6.5	27.43	0.8	0.5	0.9	0.3	0.64
Kenya	2.1	100.7	4	10.04	1.0	0.8	0.7	0.1	0.64
Bangladesh	2.4	101.5	3.5	0.38	0.9	1.0	0.6	0.0	0.63
Syria	2.5	100.1	6.5	20.4	0.8	0.5	0.9	0.2	0.61
Philippines	2.4	100.7	3.5	9	0.9	0.8	0.6	0.1	0.61
Saudi Arabia	4.7	100.3	6.5	38	0.4	0.6	0.9	0.5	0.60
Hong Kong	8.4	100.9		69.4	0.1	0.9		0.8	0.60

Source: Reuters

Following Monday's report on global food security (see *Food for thought*), it is fair to say that food-derived unrest in the Middle East couldn't come at a worse time considering the role that fertiliser – and phosphate – will need to play in feeding what's projected to be another two billion people by 2050. With arable farmland becoming scarcer, crop yield growth falling below annual population increases and a growing appetite for meat and ethanol, more stable supplies are essential.

This dynamic has led to a new class of millionaires in Canada, the US and Australia, where more stable supplies of fertiliser ingredients also exist, albeit in much smaller quantities than Morocco. It prompted Melbourne mining magnate Joseph Gutnick to list phosphate explorer Legend International on Nasdaq in 2008 (he is also preparing to spin off another \$800 million fertiliser project) and was also behind BHP chief Marius Kloppers' massive \$39 billion offer for Potash Corporation of Saskatchewan last year.

While primarily focused on potassium-bearing potash, Kloppers' bid also factored-in \$11 billion in phosphate and nitrogen assets, according to Morgan Stanley. The media, however, overlooked Potash Corp's massive trade relationship with the Bou Craa mine. Potash Corp has long been the largest buyer of phosphate from Western Sahara and combines this with potassium to create fertilizer.

Although BHP never ended up buying Potash Corp, having been blocked by the Canadian government, it is investing heavily in its \$US12 billion Jansen potash project, also located in Saskatchewan, where there have otherwise been no new potash mines in 40 years. Needless to say, BHP is not investing in Morocco.

All this then begs the question: where are the stable supplies of phosphate going to come from and who owns them? Luckily for Australia, however, there are a number of untapped deposits here that could make some investors very wealthy.

-Phosphate exposures in Australia

Name	Market Cap. (\$m)	Price	1 year price change	Price / NTA*
ARU Arafura Resources	350	0.95	58.33%	2.44
AUQ Alara Resources	38	0.3	130.77%	4.22
AXE Archer Exploration	13	0.205	36.67%	1.58
CII CI Resources	40	0.55	-34.52%	0.52
DLE Dragon Energy	39	0.19	N/A	2.74
HRR Heron Resources	48	0.19	-20.83%	0.61
IDO Indo Mines	68	0.32	-13.51%	1.87
IPL Incitec Pivot	6808	4.18	15.15%	11.18

KRB	Krucible Metals	12	0.2	-54.55%	1.46
MAK	Minemakers	94	0.415	0.00%	1.42
MLX	Metals X	382	0.28	154.55%	1.56
MNB	Minbos Resources	20	0.43	N/A	0.93
MNM	Mantle Mining Corp	24	0.125	331.03%	2.26
NTU	Northern Minerals	75	0.455	313.39%	9.73
POZ	Phosphate Australia	16	0.145	-25.64%	0.81
RUM	Rum Jungle Resources	64	0.45	500.00%	3.41
SMD	Syndicated Metals	15	0.165	3.13%	1.69
STB	South Boulder Mines	341	3.99	1187.10%	18.18
UCL	Union Resources	21	0.011	89.34%	7.94
URM	Uramet Minerals	13	0.14	225.58%	4.38

*Net Tangible Assets (ratio of less than 1.0 indicates discount)

Source: Lincoln Indicators; Datastream; Eureka Report estimates

The above table lists the stocks in Australia with a meaningful exposure to phosphate here and abroad. While companies such as Wesfarmers (WES) and Ruralco Holdings (RUL), plus the unlisted disaster of Burrup Fertilisers Pty Ltd, are also involved in the production of fertiliser, these companies do not directly benefit from the tight supply situation in phosphorous and phosphate rock. And in cases such as Incitec Pivot (IPL), as both a producer and importer of ammonium phosphate, any supply shortages and resultant price spikes cut both ways.

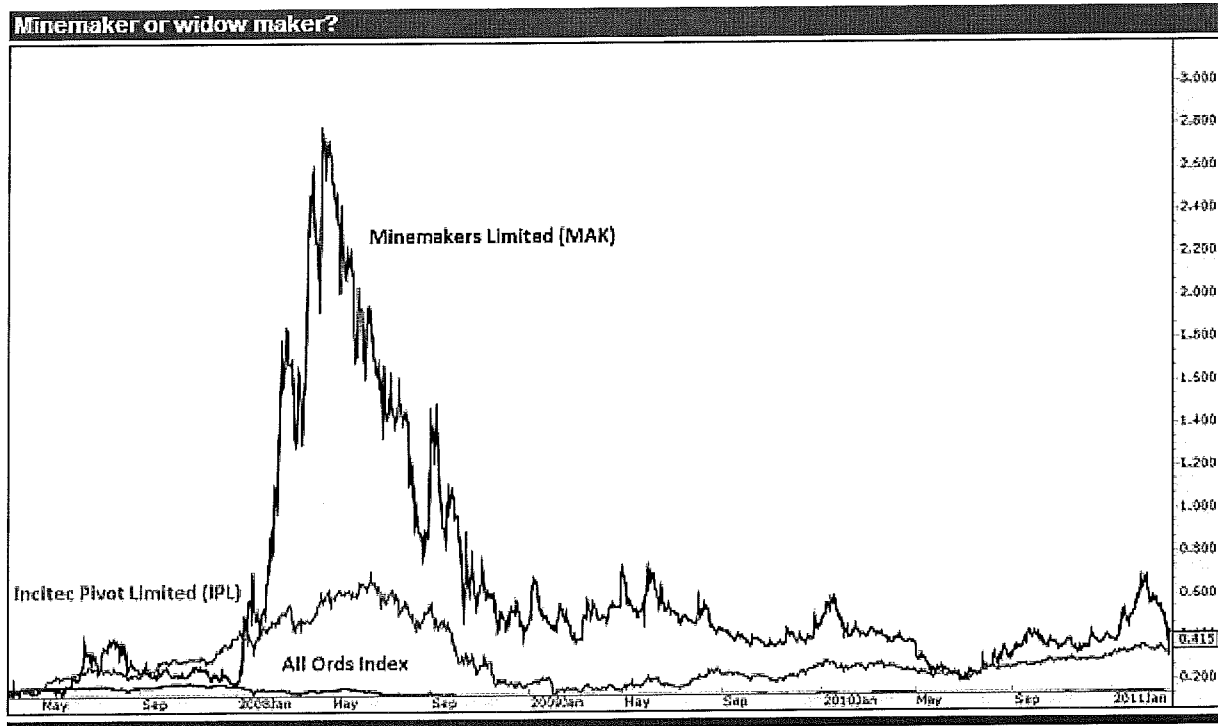
In terms of other listed exposures, most Australian companies involved in phosphates are also exposed to other minerals, chiefly uranium, which is, of course, under a cloud due to Japan's nuclear disaster. The notable exceptions, however, are Minbos Resources (MNB), Phosphate Australia (POZ) and Minemakers Limited (MAK), which has two of the biggest rock phosphate development projects in the world.

While Phosphate Australia and Minemakers are focused on the Northern Territory's Georgina Basin, Minbos is targeting major deposits in Angola and the Democratic Republic of Congo, two places that, like Morocco, are hardly by-words for stability. The Northern Territory, no matter what you think of the proposed resources rent tax, does offer the kind of sovereign risk that has made Canada such a beacon for the potash industry. There, Minemakers is the much larger player, albeit still very much a junior resources company, with the country's only phosphate development project to be granted major project status from the federal government.

Minemakers, dual-listed on the Toronto Stock Exchange, is also exposed to a marine phosphate project in Namibia, in a joint venture with Union Resources and local partner Tungeni Investments, yet it's the company's Wonarah development that is the big attraction. Inferred at an estimated 1.258 billion tonnes at 12% phosphorus oxide, Wonarah is located about 260 kilometres from the Adelaide–Darwin railway near Tennant Creek, directly adjacent to the Barkly Highway. While not as large as Bou Craa, at an estimated 1.6 billion tonnes at 31% grade, this asset nonetheless puts Minemakers in the big league.

The company's share price performance, however, belies the potential of the project, which recently secured the agreement of the area's native title owners. Minemakers is also an extremely volatile stock, shedding half its value in little over a month despite a string of positive announcements. Smaller shareholders have also long complained on project delays and, more recently, on the awarding of director options and uncertainty regarding a deal with Asian investors.

As with any small exploration or development company, Minemakers is thus exposed to a significant level of idiosyncratic risk and, unlike a company such as Incitec Pivot, it doesn't have the benefit of institutional coverage. But at Thursday's close of 41.5¢ a share, it barely prices in the value of net tangible assets on its book, worth 29.2¢ a share, let alone its potential once Wonarah is developed.



Fertiliser stocks worldwide have been sold off in recent days, due in part to the global market correction following Japan and Libya, and to the US Department of Agriculture's 2.3% increase to forecast wheat stocks. Based on the fundamentals of the looming food crisis, however, and Morocco's status as a potential Middle Eastern domino, mainstream broker reaction to fertiliser exposure seems as bizarre as Minemakers' nonsensical share price movements.

Unlike David Haselhurst, who since January has included Minemakers in his **Speculator** portfolio, I'm slightly wary about Minemakers' immediate future based on its stock's trading record, but from a top-down perspective the company sits on a potential geopolitical bonanza. By seeing where the share price went during the 2008 food crisis and understanding the structural risks to food and fertiliser supply in the future, Minemakers may be worth a long-term speculative punt. If not, at least it makes for interesting conversation at the dinner table.