

VietinbankSc Industry Report

# Fertilizers manufacturing in Vietnam

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# About this Industry

## Industry Definition

This industry primarily manufactures fertilizer products. These products are produced by different mixture of three vital nutrients essential for the growth of plants including Nitrogen (N), phosphorous (P) and potassium (K).

## Main activities

### Industry products

- Nitrogenous fertilizers (Urea fertilizers)
- Phosphate fertilizers (Superphosphate or melting phosphate)
- Mixed fertilizers (NPK)

### Industry activities

- Manufacturing ammonia, ammonium nitrate, ammonium sulphate and ammonium phosphates
- Manufacturing natural-organic and animal-waste fertilizers
- Manufacturing nitrogenous fertilizer materials
- Manufacturing urea
- Manufacturing phosphate fertilizer materials
- Mixing purchased fertilizer materials
- Importing and exporting fertilizers

## Similar industry

### Petrochemical manufacturing

Operators in the industry provides petrochemical products

### 20210 Pesticide manufacturing

Operators in the industry provides pesticide products for agriculture

### 20110 Chemical product manufacturing

Operators in the industry provides chemical products

## Addition resources

For additional information on the industry

[www.vnfav.com](http://www.vnfav.com)

Vietnam Fertilizer Association

[www.mard.gov.vn](http://www.mard.gov.vn)

The Ministry of Agriculture and Rural Development

[www.agromonitor.vn](http://www.agromonitor.vn)

Vietnam Agromonitor

# Industry at glance

## Key statistics snapshot (2013)

Total domestic supply  
**8.3 million tons**

Annual growth 13-18  
**7.57%**

Total fertilizer demand  
**10.345m tons**

Revenue (2012)  
**VND33.8tril**

Profit after tax (2012)<sup>1</sup>  
**VND3.830tril**

Businesses  
**300**

Total export  
**0.98m tons**

Total import  
**2.5m tons**

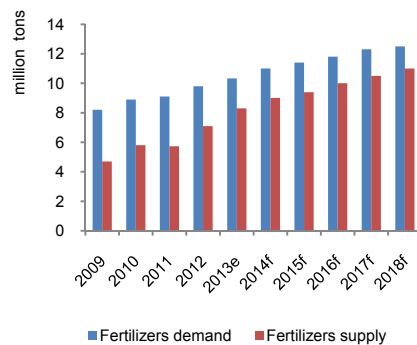
## Market share

DPM  
55% (Urea market)

LAS  
80% (Phosphate market)

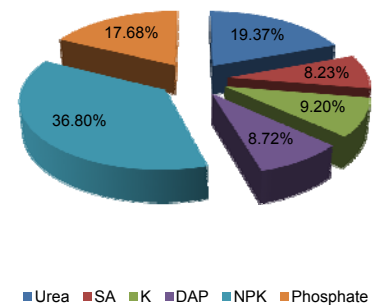
LAS  
20% (NPK market)

**Domestic fertilizers demand and supply**



Source: *MARD*

**Demand by fertilizer products**



## Key external drivers

Arable land

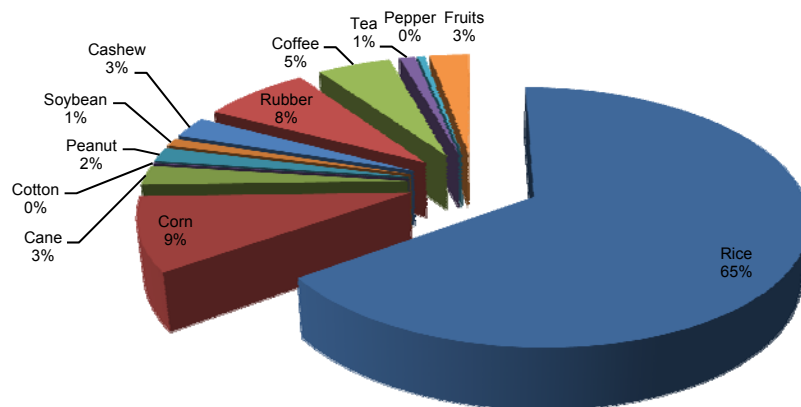
Food demand

Competition from other countries

Global fertilizers price

Material inputs price

**Major market segmentation by crops**



Source: *VietinBankSc*

## Industry structure

Life cycle stage	Early Shakeout	Regulation level	Low
Revenue Volatility	Medium	Technology change	Low
Capital Intensity	High	Barrier to entry	High
Industry Assistance	High	Industry globalization	Low
Concentration Level	Medium	Competition level	Medium Low

<sup>1</sup> Total revenue and profit of the industry are calculated from top 8 fertilizers companies only due to information unavailability of remaining participants.

# Industry Performance

Executive Summary | Key External Drivers | Current Performance | Industry Outlook | Industry Life Cycle

## Executive summary

The fertilizers industry is ahead of the pack when it comes to sales. Even during the economic recession, which slowed the demand throughout most of manufacturing sectors, the industry continued to yield revenue growth. This trend was mainly driven by stable fertilizers demand and an increase in cultivated area. In the time of economic downturn, when customers of all income levels reduced spending in non-necessary products or economic entities shrunk down their businesses, the fertilizers consumption of fertilizers wholesalers, retailers and other customers remain identical as it is vital inputs for plants care, and then, for food production. However, due to the downtrend in global fertilizers price and uptrend in materials inputs cost, the revenue growth slowed down but remain the positive trend. The revenue growth in the last four years was 17.79% per annum on average, and is expected to decline to 13.8%/year in the next 5 years.

One of the features should be highlighted is that 2013 has been the

first year the industry production meets the domestic urea fertilizers demand. Even, participants in the market are looking for fertilizers export activities, represented by the rising in export amount from 0.4m tons in 2009 to 1.35m tons in 2012. Given these conditions, the market showed a signal of downtrend in fertilizers import.

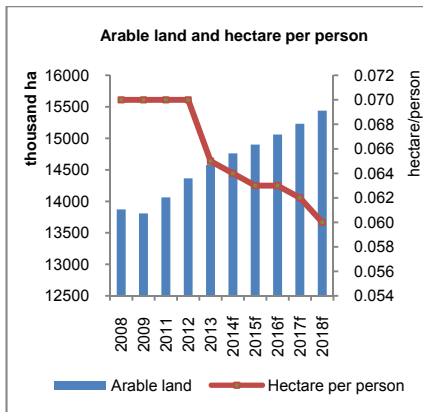
In the five years to 2018, the industry continuously expects a positive trend. The profitability would increase at lower speed, however. This is because the industry is at its early shakeout stage. Though the emerging trend in environment preservation has demanded for high quality fertilizers and fertilizers export will contribute more in total revenue, over urea and phosphate production capacity will reduce pricing power of industry players. This results in a squash in the profit growth. Therefore, the industry expects to have a profit growth of 15.8%/year, which is lower than 30%/year of the last four years.

# Industry Performance

Executive Summary | Key External Drivers | Current Performance | Industry Outlook | Industry Life Cycle

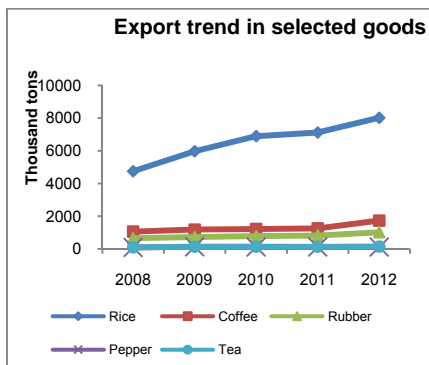
## Key external drivers

Arable land has increased over years and is more likely to increase to 15.5 million hectare in 2018.



Source: GSO, World Bank Data

High domestic demand as population is expected to reach 100million  
High rice, rubber, pepper export Demand



Source: GSO

Domestic players have been competing with foreign companies from 14 countries. Especially, China fertilizers account for 49% of total import

## Arable land

A hectare needs a specific quantity of fertilizers, depending on crops and soils. The larger arable land is, the more fertilizers are demanded. Even, the statistic shows the growth of arable land from 1995 is 57.7%, which is far lower than the growth of fertilizer consumption (517%). However, recently, the growth of fertilizer demand increases at lower speed as arable land is saturated.

Arable land in Vietnam increases every year by absolute amount (around 200,000ha/year) but stays nearly the same by hectare per person (0.07). In comparison with other countries, arable land per person of Vietnam is a bit low but the quantity of fertilizer used per hectare is medium.

Arable land and fertilizers demand in selected countries 2011

Countries	Brunei	Cambodia	Indonesia	Malaysia	Myanmar	Philippines
<b>Kg/hectare</b>	575.3	11.5	181.5	1096.5	6.2	149
<b>Arable land per person</b>	0.01	0.27	0.1	0.06	0.21	0.06
Countries	Thailand	Vietnam	India	China	Japan	Australia
<b>Kg/hectare</b>	162.2	310.5	178.5	548.3	261.4	46.3
<b>Arable land per person</b>	0.24	0.07	0.13	0.08	0.03	2.14

Source: World Bank

## Food demand

According to Ministry of Agriculture and Rural Development (MARD), the

growth of food demand is higher than growth of food production.

### Domestic demand

To 2020, Vietnam population is estimated to increase to 100 million in comparison with 90million in 2013. Yet, the structure and quality of food consumption will follow the trend of reducing rice, meat, vegetables, which are substituted by the increase of eggs and milk. In 2020, food consumption, per capita

consumption will reduce to 100kg of rice, 45 kg of meats, fish of all kinds 30kg, 50 kg of fruits, vegetables 120 kg, increase consumption of eggs, milk 2 times as compared with 2012. Therefore, the total amount of rice and vegetable demand might increase but the amount per person decrease.

### Exportation demand

Vietnam remains the country, which has been exporting a large amount of rice, rubber, pepper, and so on in the world. The quantity of those products exported oversea

increased over years. The more concentration is put into those products, the higher the demand of fertilizers will be.

## Competition from other countries, particularly, from China

Competition from other countries proves high, when 40% of total domestic demand is outsourced in 2012. Since Vietnam manufacturers are unable to produce K and SA fertilizers, 1.5 to 1.8 million tons of K

and SA must be imported. Moreover, prior to 2012, urea or NPK production did not meet the demand, resulting in nearly 1 million tons imported each year.

# Industry Performance

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Vietnam import fertilizers mainly from China, which accounts for around 49% of total imported amount. China has competitive advantage related to high production capacity of 61million tons/year. As a result, Chinese fertilizers are sold at VND500-1000/kg lower than Vietnam fertilizer. For example, in October 2013, Ninh Binh or Phu My fertilizers cost VND 470,000 – 500,000/pack of 50kg while fertilizers

imported from China are at only VND 440,000 to 450,000/ pack of 50kg (Vietnam Customs). Philippines, Japan, Israel and Middle East countries are also top fertilizer exporters to Vietnam. Middle East countries with an advantage of cheap natural gas and oil resulting in low cost of goods sold have strong power in fertilizer price determination.

International and domestic fertilizers price are both in downtrend

Changes in Urea international & domestic price

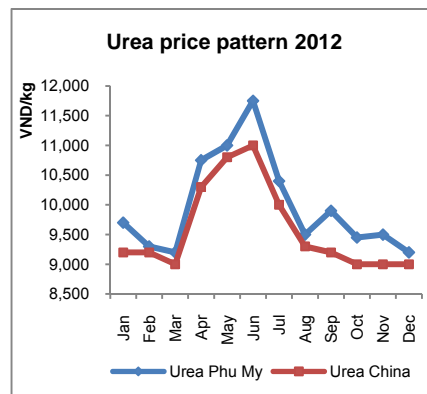
Market	15 days October, 2013	September 2013	Change
Yuzhny (FOB)	292-300	285-290	Increase 7-10
Baltic (FOB)	300-303	310-315	Increase 10-12
North Vietnam	8,500-8,900/kg	8,600-9,200/kg	Increase 100-300
South Vietnam	8,200-8,900/kg	8,300-9,300/kg	Increase 100-400

Source: Office of Price Administration

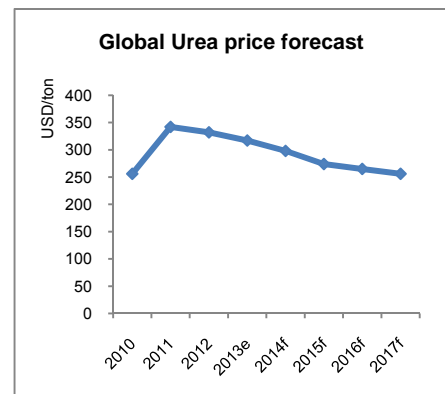
## Global fertilizer prices

Vietnam fertilizers price is significantly impacted by global fertilizers price. This is driven by the fact that Vietnam still needs to import fertilizers from global market. Thus, Vietnam manufacturers need to sell their products at or even lower price compared to foreign countries. Then, a move in global price will automatically reflected in Vietnam fertilizer prices.

In the long term, fertilizers price in global market is at down trend in the oversupply circumstance, said the Secretary- General of Vietnam Fertilizers Association. In accordance to IFA estimation, to 2014-2015, the amount of global potash inventories will be around 15-18 million tons. Therefore, the price in Vietnam will decrease, accordingly.



Source: DPM



Source: World Bank

## Input materials price remains the main driver

Profit of the industry majorly depends on the material inputs expenses used to produce fertilizers. Natural gas or coal makes a biggest

contribution to Urea cost of goods sold while those in Phosphate are Apatite and Sulfur.

## Natural gas

Natural gas increased unexpectedly 40% in 2012, and is projected to increase 2% each year thereafter.

Year	Share of natural gas used for fertilizer to total natural gas supply						
	2006	2007	2008	2010	2011	2015	2025
Power	5	5.1	6.1	8.4	N/A	12.9	20
Fertilizer	0.5	0.5	0.5	0.5	N/A	1	1
CNG				0.2	N/A	0.3	0.3
Petrochemical					N/A	0.4	0.4
Industrial and residential	0.3	0.3	0.4	1.8	N/A	4.6	6
Total	5.7	6	7	11	9.5	19.1	27.8

Source: Energy Quest

# Industry Performance

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Natural gas is supplied monopoly by PV Gas. Growth of fertilizers industry particularly is challenged by the availability and price of natural gas. During the surging energy prices, natural gas production activities are intensified to cater demand for energy sector, which could increase risk of declining gas supply to fertilizer sector. Besides, the price of natural gas is increasing every year. In 2012, the price is determined at \$6.43/MMBTU on average, unexpectedly increasing 40% in

comparison with previous year. The prices is also projected to increase 2%/year thereafter.

Each ton of urea requires 27 MMBTU of natural gas, translating to it costs \$173.61 natural gas for a ton of urea. However, the price of natural gas sold to fertilizer plants is subsidized by the government, fertiliser enterprises only had to buy gas at a price equal to 50 per cent of the market price.

Coal makes up 70% of urea cost of goods sold and might increase from 21% to 82%/year

## Coal

When it comes to coal price determination, Vietnam national coal – mineral industries holding corporation (Vinacomin) has the strongest price control. According to

vice chairman and general secretary of the Fertiliser Association of Viet Nam, the prices of coal for producing fertiliser will increase about 21 per cent to 82 per cent each year.

Ban on apatite export benefits local fertilizer plants. However, the price has been rising 7%/year.

## Apatite

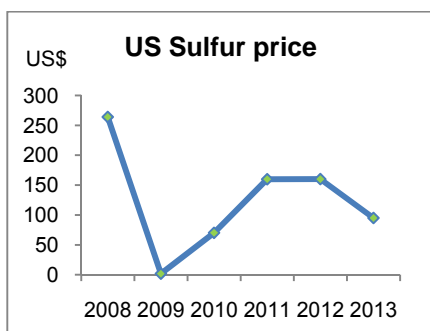
Apatite is a natural resource, which can be exploited in Lao Cai province. A recent ban on exporting Apatite is an advantage for domestic fertilizer

enterprises. However, as an increase in electricity expense for Apatite production, recently, Apatite price has rose 7% each year.

## Sulfur

Vietnam Sulfur consumption totally relies on import; thus, the price is heavily dependent on the ups and downs of Sulfur International price.

In the US, the Sulfur price has been experiencing a decline in 2012 but is expected to jump back by 10% in 2014.



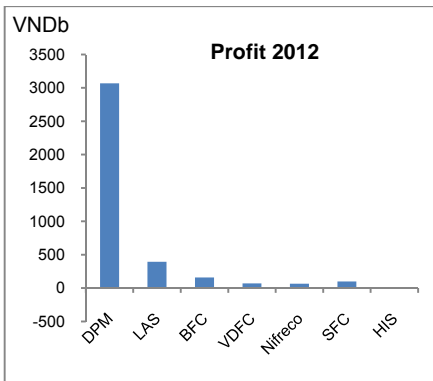
Source: USGC

# Industry Performance

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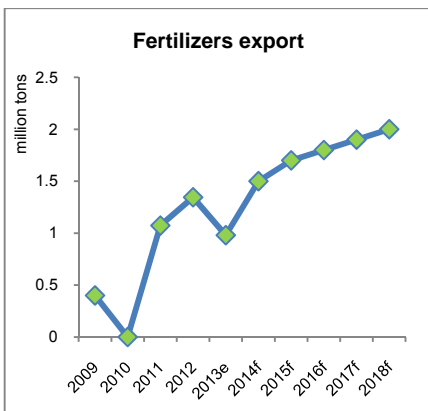
## Current performance

Reported a profit growth, yet, the speed is slowing down from 60% in 2011 to only 1.17% in 2012.



Source: VietinbankSc

2.36 million tons outputs versus 2 million tons demanded



Source: Vietnam Customs

## Fertilizers realized profit growth regardless of economic slowdown

Although the current challenging economic environment undermined almost economic sectors, fertilizer industry has still outperformed. This has been driven by a stable and constant fertilizer demand, which can be further explained by some reasons, such as more than 60% of the population work in agricultural sectors, arable land increases 1% each year, and food demand is rising at the higher growth than that of population. Therefore, local fertilizer plants find it easy to market their products.

Nonetheless, high profit, fluctuation in profit growth was recorded. This is because domestic fertilizers price is dependent on international price,

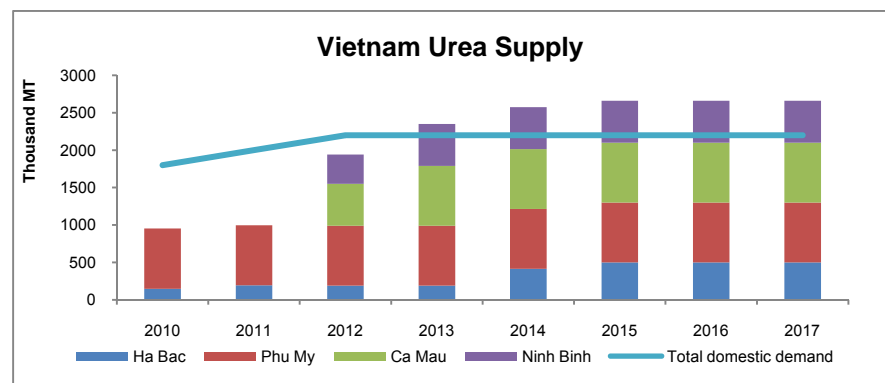
which were oscillated significantly after the economic recession 2008. Especially, excess production has resulted in a squeeze in profit growth for the industry. Net profit margin and profit growth has been reduced from 12.9% and 60% in 2011 to 10.46% and 1.17% in 2012, respectively. Clearly, when supply is over demand, under market force, the price will decrease, thus, revenue and profit decrease as a result.

It is also crucial to highlight that profit varies among participants. The highest profit came to DPM (above VND3trillion), while HIS recorded a negative net income of VND 2billion.

## Urea market has already been oversupplied

From a country importing Urea, phosphate and NPK fertilizers, Vietnam has been moving into a period of fertilizers oversupply. 2013 has been the first year Vietnam is able to completely provide urea needs thanks to the establishment of Ca Mau fertilizer Plant and Ninh Binh

Fertilizer Plant in 2012 with the capacity of 800,000 tons/year and 560,000 tons/year, respectively. These two new plants and two existing plants provide a total capacity of 2.36 million tons of urea, more than two folds as compared to 2011.



Source: DPM

## A push for fertilizers export

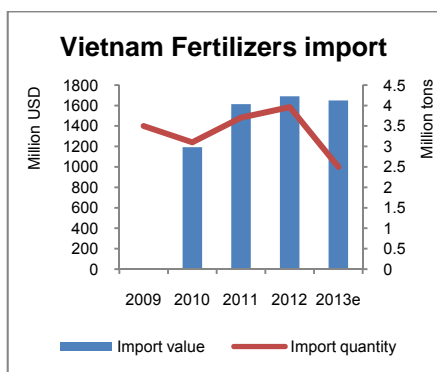
Urea and phosphate fertilizers import activity in the past would come to an end when urea supply exceeds the domestic urea demand from 360 to 569 thousand tons/year. In the circumstance, fertilizer plants have started looking for new market in foreign countries. If the amount of fertilizer export was minor at 400,000 tons in 2009, this activity become

more competitive in 2011 and 2012 in terms of amount and value (there was a ban on exporting fertilizer in 2010). In 2012, Vietnam exported to 40 different countries globally with the main markets being Cambodia (US\$192m), Philippines (US\$59m), and Malaysia (US\$52m). The increasing trend is expected to remain in the next five years.



# Industry Performance

Executive Summary | Key External Drivers | Current Performance | Industry Outlook | Industry Life Cycle



Source: Vietnam Customs

## Fertilizers import has reduced

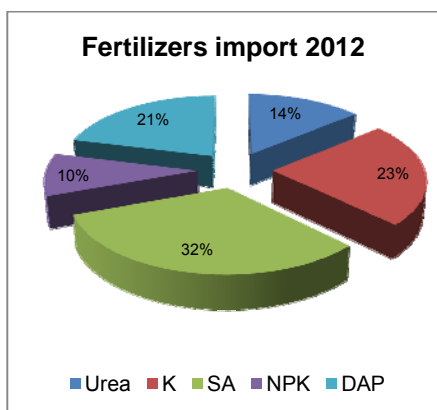
The amount and value of fertilizers imported have been decreased in 2013 (from around 4million tons in

2012 to only 2.5m tons in 2013) and are projected to continuously decrease in the next years.

### SA, K and DAP

Vietnam fertilizer enterprises have not been able to produce SA and K as Vietnam does not have Potassium ore, while each year, famers require around 900 thousand tons Kali and 700 thousand tons SA. Hence, irrefutably, Vietnam must import entire the amount demanded

(SA and K remain the biggest portion in import structure). In respect to DAP, Vietnam expects a full supply when Lao Cai DAP II with the production capacity of 330,000 tons/year comes into operation to satisfy a demand of 700,000 tons a year.



Source: Vietnam Customs

### Urea, NPK and other fertilizers

Though the urea production has provided an adequate amount for domestic demand, Vietnam still import fertilizers from other countries, especially from China because of lower price. Therefore, in the first 8 months of 2013, Custom

reported around 800 thousand tons of nitrogenous and phosphate fertilizers imported. However, the pattern is decreasing with Urea import declining 55.4% (in quantity) and 52.5% (in value) in 2012 as compared to 2011.

## High financial leverage

In a financial perspective, the industry has debt/equity ratio at 225%. This means, participants fund their operating activities by loans rather than their owned capital. From the view of investors, the situation seems very risky.

listed companies, debt ratio of HIS, LAS are 84% and 52% respectively. The solvency and financial condition of DPM is more stable, with only 8% debt ratio.

However, the situation goes very different between listed group and unlisted group. The former have been financing their business equally or even mainly by equity. Among

On the other hand, the later reported an extremely high debt ratio of 500% to 600%. This is understandable because private companies find it hardly to assess public funds. Instead, bank loans are the option.

## Liquidity should be taken into account

The industry recorded a medium level of liquidity risk, but the trend is increasing, represented by the declining in current ratio and quick ratio of majority of players. It should

be cautious as quick ratio is low. This determines that the industry has a relatively high receivables account and inventories account.

		Liquidity position of key players in the industry				
Player		2009	2010	2011	2012	
DPM	Current Ratio	6.84	5.22	6.99	1.20	
	Quick Ratio	5.83	4.50	5.65	0.36	
LAS	Current Ratio	1.18	1.47	1.57	1.65	
	Quick Ratio	0.40	0.70	0.55	0.35	
HSI	Current Ratio	1.08	1.15	1.06	0.99	
	Quick Ratio	0.56	0.52	0.35	0.34	
SFJC	Current Ratio	N/A	N/A	0.90	0.96	
	Quick Ratio	N/A	N/A	0.33	0.35	
BFC	Current Ratio	N/A	N/A	1.06	1.10	
	Quick Ratio	N/A	N/A	0.39	0.49	
NIFRECO	Current Ratio	N/A	2.84	1.96	N/A	
	Quick Ratio	N/A	1.59	0.77	N/A	

Source: VietinbankSc

# Industry Performance

Executive Summary | Key External Drivers | Current Performance | Industry Outlook | Industry Life Cycle

## Industry Outlook

There will be a squeeze in profit growth

### Profit is projected to grow at slower speed

Fertilizer industry expects a squash in the profit growth. The argument has been clarified by a combination of reasons, including:

- (1) *Market oversupply*: fertilizers enterprises are forced to reduce their price in order to remain their market share if there is no difference in quality and services provided to customers in comparison with other competitors. Stable demand associated with declining price will result in lower revenue for the sector.
- (2) *Downtrend in global price*: Local enterprises will underperform their foreign peers if their prices are higher than imported price.

Customers will choose the best bargain among suppliers.

- (3) *Upward trend in material inputs price*: Fertilizer enterprises are subsidized by government in form of lower inputs price than market price. For example, natural gas sold to DPM and Ca Mau fertilizer plants was approximately \$6.43/million BTU, which was far lower than commercial price sold to industrial customers of \$10-14/million BTU. However, the price of those inputs is increasing every year following the road map determined by Prime Minister.

Fertilizers demand of some countries 2012	
Countries	Fertilizer Demand
Myanmar	400,000/year
Thailand	2,200,000/year
Cambodia	250,000/year
Philippines	800,000/year
South Korea	700,000/year

Source: PVFCCo

### Revenue from fertilizer export will contribute more in total revenue

According to VFA, not only located in the center of Southeast Asia but bordered by the sea also, Vietnam possesses many commercial advantages for fertilizer exports to other countries in the region such as Myanmar, Thailand, Cambodia, Philippines and so on.

Low freight cost and abundant demand from Asian countries promise a strong growth in revenue of Vietnam fertilizer industry. Currently, the export activities accounts for below 5% of total revenue, but is projected to reach 10-15% in the next few years.

### Fertilizer import expects a decrease

Despite accounting for nearly 20% of total fertilizer demand, Vietnam still need to import 100% of total SA and K demand, and 65% of total DAP demand from other countries. However, the quantity of fertilizer imported is estimated to decrease because:

- (1) The presence of DAP II Yen Bai
- (2) Potassium salts in Lao are being mined out by Vinachem, which can reduce

considerably the amount of Potash imported in future.

- (3) Import tax is likely to impose upon Urea. Urea is currently exempt from tax to support farmers because of prior Urea shortage. However from 2013 onwards, production of urea would exceed demand, thus the possibility of import duty proves high.

### Environment preservation will drive demand for friendly fertilizers

Currently, the using of fertilizers adversely impacts environmental conditions when around 50-60% Flo, 40-60% Nitrogen cannot be

absorbed by plants. Therefore, the hunting for high quality premium fertilizers will increase.

### Investments in SA, Potash fertilizers to drive prospective growth

The over investment in some specific segmentation such as Urea, NPK or phosphate cannot bring the most efficient economic of scale for fertilizer companies. Thence, new

investment should be allocated into new products in order to maximize product diversification and minimize fertilizers import activity.

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## Industry Life Cycle

The industry is at its Early SHAKEOUT stage

The Fertilizers Industry is in an early shakeout stage of its life cycle, typified by slow growth, overcapacity and higher barrier to entry.

The industry's profit growth started slowing down from 2012, and is expected to remain that trend in 5 years perspectives. In 2012, the industry's contribution to the economy was 0.12% on average, and is expected to grow at an annualized rate of 15.8% compared to 30% of the last four years. In comparison, GDP growth of Vietnam is projected to be around 7.5% per annum during the same period. Industry is growing faster than the economy, but with declining rate, translating to it is at shakeout period.

From the 2012 onwards, the industry has realized an overcapacity in Urea

production, driven by a number of newly established fertilizer plants against constant demand. Overcapacity is a specific feature of shakeout period when companies in the industry has begun to consider cost cutting for restructure. The competition in the market will become more intensive as it is the time of oversupply. Intense competition, combined with high technology change and stricter regulation make the barriers to enter the market and the possibility of failure higher. According to MARD, the number of fertilizer enterprises in the industry is expected to decrease by a half in the next few years as the compliance of Decree 202/2013/ND-CP.

# Products and Markets

Supply Chain | Products and Services | Demand Determinants | Major Markets | Business Locations

## Supply Chain

### KEY BUYING INDUSTRIES

#### Wholesalers and retailers

This is the biggest customer group. The industry might rely on wholesalers and retailers to distribute their product domestically and globally.

#### Fertilizers manufacturers

The industry might rely on fertilizer enterprises to purchase their products. For example, in order to produce NPK, NPK fertilizers plants buy Urea from Urea manufacturers.

### KEY SELLING INDUSTRIES

#### Natural gas products suppliers

These entities supply the industry the most important component in Urea production. In Vietnam, the entity is PV Gas.

#### Coal suppliers

These entities supply the industry the most important component in Urea production. In Vietnam, the entity is Vinacomin.

#### Apatite providers

These entities supply the industry the most important component in Superphosphate production.

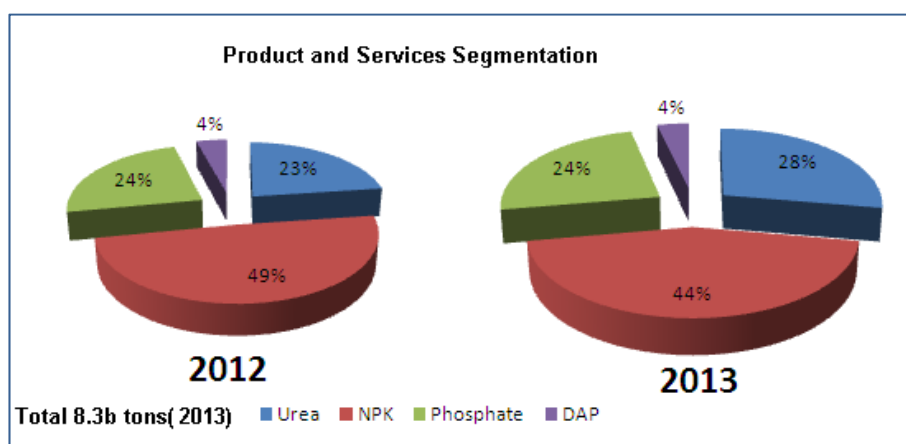
#### Sulfur providers

These entities supply the industry the most important component in Superphosphate production.

#### Fertilizer products suppliers

The industry might import some kinds of fertilizers to re-distribute to domestic wholesalers and stores.

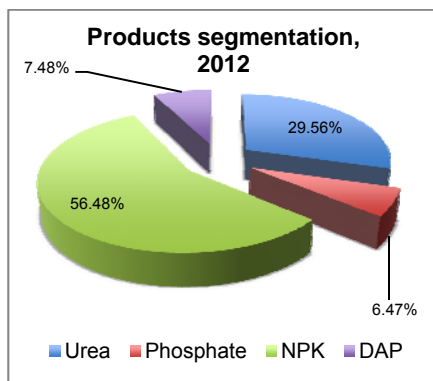
## Products and Services



Product segmentation by production. Source: Apromaco

# Products and Markets

Supply Chain | Products and Services | Demand Determinants | Major Markets | Business Locations



Source: VietinbankSc

## NPK manufacturing

As it provides all three vital nutrients of nitrogen (N), phosphorus (P) and potassium (K), which enables to improve the quality of agricultural products and reducing labor force, it is not surprising that NPK is the highest demanded fertilizer by farmer (44% with 3.5m tons). Revenue earned from the segment made up the largest portion of 56% of total for the industry accordingly.

NPK production has been witnessing an upward trend, driven by the participation of a number of fertilizer plants to the industry. In fact, there are five major fertilizer plants and more than 200 small companies sharing NPK market. Cost of NPK production depends largely on those three components. While N can be purchased domestically, P can be produced in house, K must be imported.

## Urea manufacturing

Among 13 essential nutrients for crops, protein contained in urea fertilizers is the most important nutrient, the easiest to use and ranks top in plants absorption capacity. Because nitrogen (N) also is included in NPK, thus, the demand for Urea is a bit lower than NPK. Each year, Vietnam needs around 2million tons for agriculture. Therefore, revenue generated from urea manufacturing account for lower percentage of nearly 30%.

responsible for Urea fertilizers production using natural gas as main input. By contrast, Ha Bac fertilizer plant (designed capacity of 190,000 tons/year) and Ninh Binh Fertilizer Plant (designed capacity of 560,000 tons/year) produce Urea by coal.

With the full operation of these plants, from 2013 onwards, the Urea market in Vietnam becomes less dependent on import. However, when domestic supply far exceeds domestic demand, fertilizers companies will find it more difficult to market their products. Market share will experience much alteration as the competition on price and products quality will become more extensive.

Currently, Urea is produced domestically by four main plants. Petro Vietnam Fertilizer and Chemical JSC (DPM with design capacity of 800,000 tons/year), and Ca Mau Fertilizer Plant (designed capacity of 800,000 tons/year) are

## Phosphate manufacturing

FMP is consistent with acidic soils, steep valleys, hills and mountains. There are two types of phosphate fertilizer comprising superphosphate and melting phosphate. Vietnam call for phosphate is estimated at

1.8million each year. Four big plants in Vietnam with high designed capacity sufficiently satisfy domestic demand. Then, phosphate is supplied 100% from local factories.

## DAP

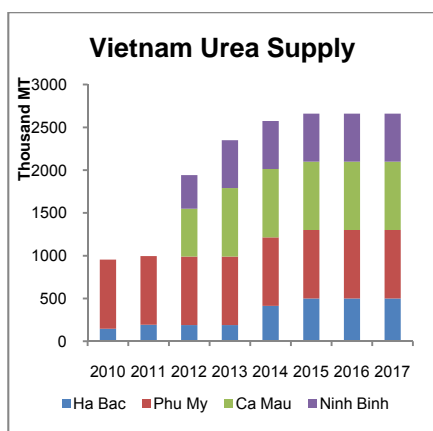
This type is produced by mixing sulphate with superphosphate amon. It contains large portion of phosphate, therefore suitable for using on alkaline soils, or basalt. Currently, there is only one DAP 1

company manufacturing this product with the designed capacity is 330,000 tons/year. However, DAP 2 Company is coming into operation with same design productivity, which makes DAP demand fulfilled.

## Fertilizers imports

The inability of producing SA and K or the shortage of DAP supply cause Vietnam to import fertilizer oversea. In addition, because of lower price from China, Vietnam still imports

Urea, or phosphates, which are already supplied by local companies, which causes import amount and value remaining high over years.



Source: VietinbankSc

# Products and Markets

Supply Chain | Products and Services | Demand Determinants | Major Markets | Business Locations

## Demand determinants

Demand for fertilizers is affected by land, plants and climate and fertilizer using habit.

### Arable land

Arable land is the main drivers for industry demand by definition. As the arable land increases, farmers will have higher claim of fertilizers in order to provide adequate nutrients for plants in expectation of highest productivity.

In addition, the higher the population, domestic and export food demand is, the larger cultivated area needed. As a result, barren lands will be exploited and suitable fertilizers providing nutrients such as FMP will be in high demand.

### Type of land, plant and climate

Type of fertilizers varies among cultivated area, crops and climate. Both users and suppliers need to have good understanding on fertilizers uses in order to minimize

fertilizers expenses and maximize its effectiveness. Presently, the urea use efficiency has only reached 30-45%, phosphate 40-45% and potash 40-50%, according to VFA.

### Fertilizers using habit

The demand of fertilizer also depends on habit of farmers. In Vietnam, a majority of farmers are now overusing urea. They use mainly prilled urea and blended NPK for farming. DAP fertilizer is used

merely in the South of Vietnam. Therefore, factories and distribution channels should be aware of these habits in order to sell products to appropriate customers.

### Cropping seasons

The differences in climate conditions and crop cycle length equate to three main cropping seasons in Vietnam. This explains the fluctuations in fertilizer demand

during the year. As can be seen in the table, the fertilizer demand for this crop is highest, followed by summer-autumn and winter crop.

Seasons	Fertilizers demand (thousand tons)
Winter	5,090
Winter spring	2,510
Summer-Autumn	2,725

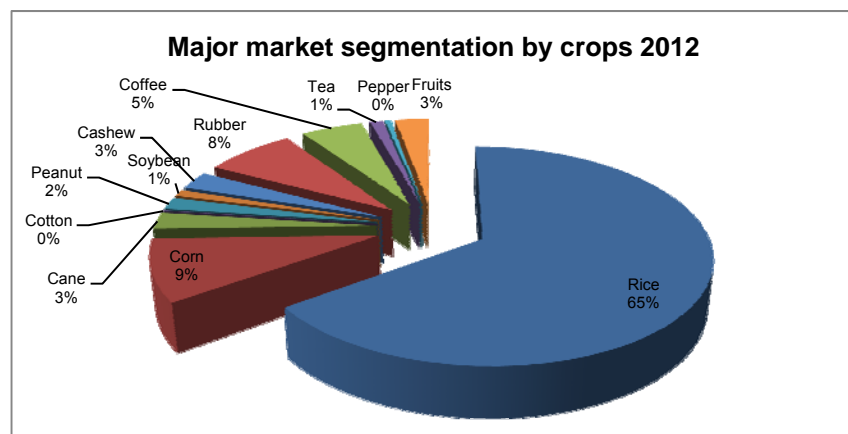
Source: MARĐ

## Major Markets

Because of information unavailability, industry revenue cannot be broken down into different types of plants or area. Therefore, arable land in terms of crops will be

the appropriate proxy to present major markets as it is considered that there is a strong positive correlation between arable land and fertilizer used.

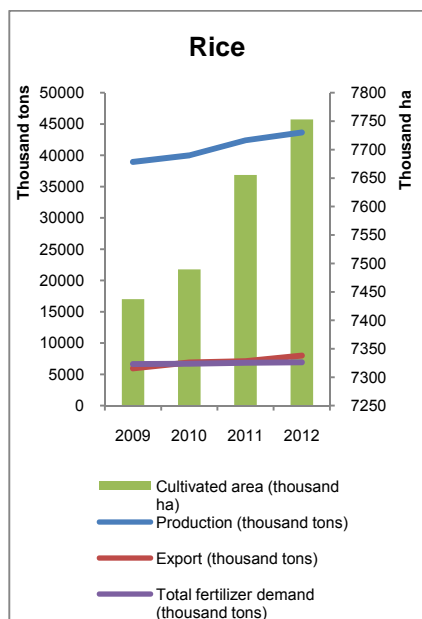
### Major markets by crops



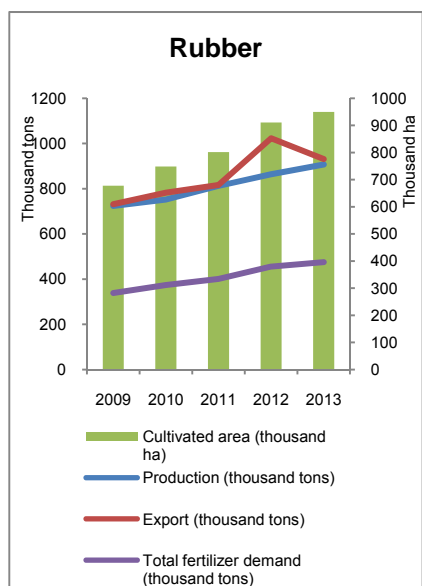
Source: VietinBankSc

# Products and Markets

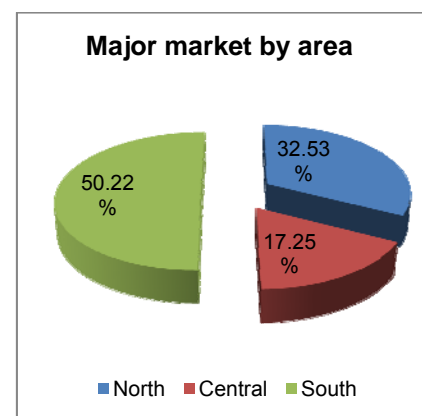
Supply Chain | Products and Services | Demand Determinants | Major Markets | Business Locations



Source: VietinbankSc



Source: VietinbankSc



Source: VietinBankSc

## Rice

The largest market for fertilizer industry goes for rice segment, which accounts for 65.14% of total arable land in Vietnam. This is understandable because culturally, rice is the indispensable dish in the Vietnamese meal. In addition, Vietnam is the second largest rice exporter in the globe. Vietnam rice export has been increasing in both quantity and value over years. The cultivated area for rice and rice production rose at the growth of

1.28% and 0.32% in 2012, correspondingly.

Nutritional needs vary among rice varieties. Currently, hybrid rice varieties generally have higher nutritional demand than traditional rice varieties. However, both types claim for higher amount of nitrogenous fertilizers and phosphate fertilizers than potash. Therefore, Urea or phosphate fertilizer plants can benefit from this feature to increase their revenue.

	Fertilizers demand by rice crops					
	Nitrogenous fertilizer (kg/ha)		Phosphate fertilizer (kg/ha)		Kali (kg/ha)	
	N	Urea	P2O5	Super	K20	Kd
Pure rice varieties (90-120 days)	100-200	220-260	50-60	300-350	48-60	80-100
Pure rice varieties (>120 days)	115-138	250-300	60-70	350-400	60-90	100-150
Hybrid rice varieties	138-147	300-320	70-75	400-450	90-120	150-200

Source: DPM

## Corn

Corn ranks second in total demand for fertilizers. Ministry of Agricultural and rural development determines corn is the second important food after rice in Vietnam. The cultivated area and productivity also experience an upward trend in the past 5 years. However, over 1 million ton of corn has been imported each year due to corn shortage.

Therefore, increasing effort is put into corn segment to increase corn productivity. High quality fertilizers should contribute a part.

Fertilizer call for corn crop is similar to rice crops with the phosphate fertilizer accounting for the highest amount, followed by nitrogenous fertilizer and potash fertilizer.

## Rubber

Vietnam is the 5<sup>th</sup> largest producer and the fourth largest exporter of rubber globally. Therefore, rubber industry received much attention from government, producers and

fertilizer manufacturers. The demand of fertilizer for rubber production increase gradually in the past 5 years, and accounting for nearly 5% of total fertilizer demand.

## Major markets by Area

Holding the highest portion of total cultivated land, especially for rice crops, it is not surprising that Southern area becomes a biggest market for fertilizer industry. Apart from domestic demand, the incentive for exporting agricultural products cause sellers put more attention on

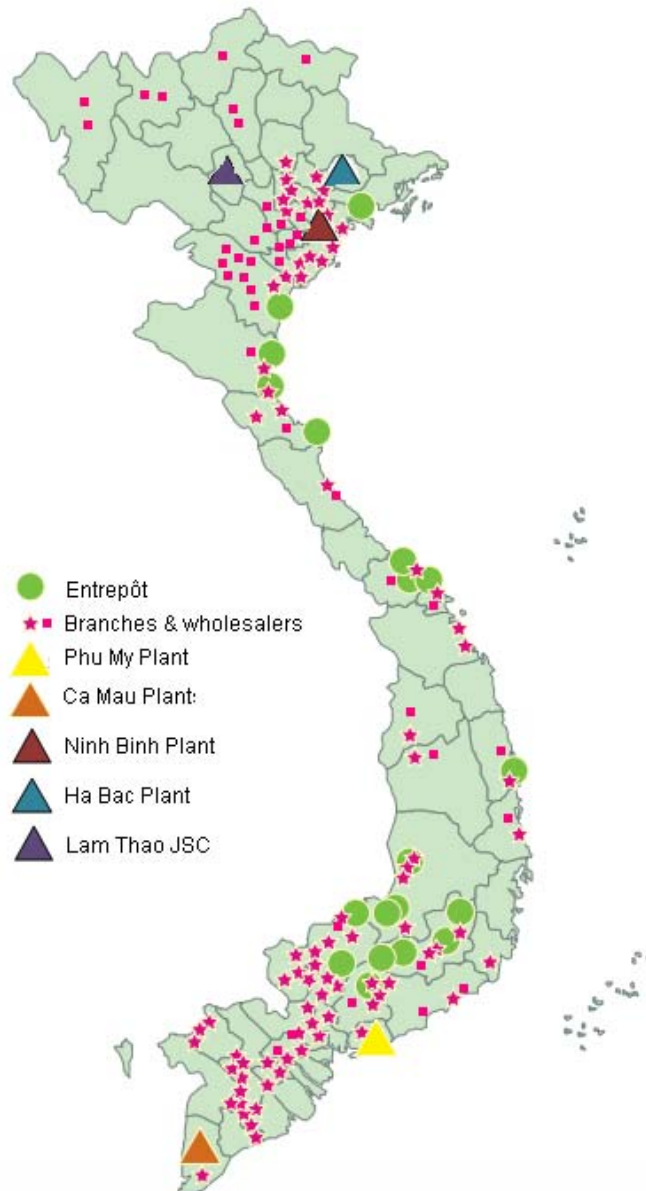
the quality of fertilizer to ensure the improvement of productivity and quality of outputs. Moreover, export ports are concentrated in the region (Ba Ria – Vung Tau, Ho Chi Minh City), the demand of fertilizers for export proves high as well.

# Products and Markets

Supply Chain | Products and Services | Demand Determinants | Major Markets | Business Locations

## Business locations

Fertilizers companies, plants, entrepôt, branches and wholesalers are concentrated mainly in Northern Delta and Southern Delta, where the demand for fertilizers is highest.





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