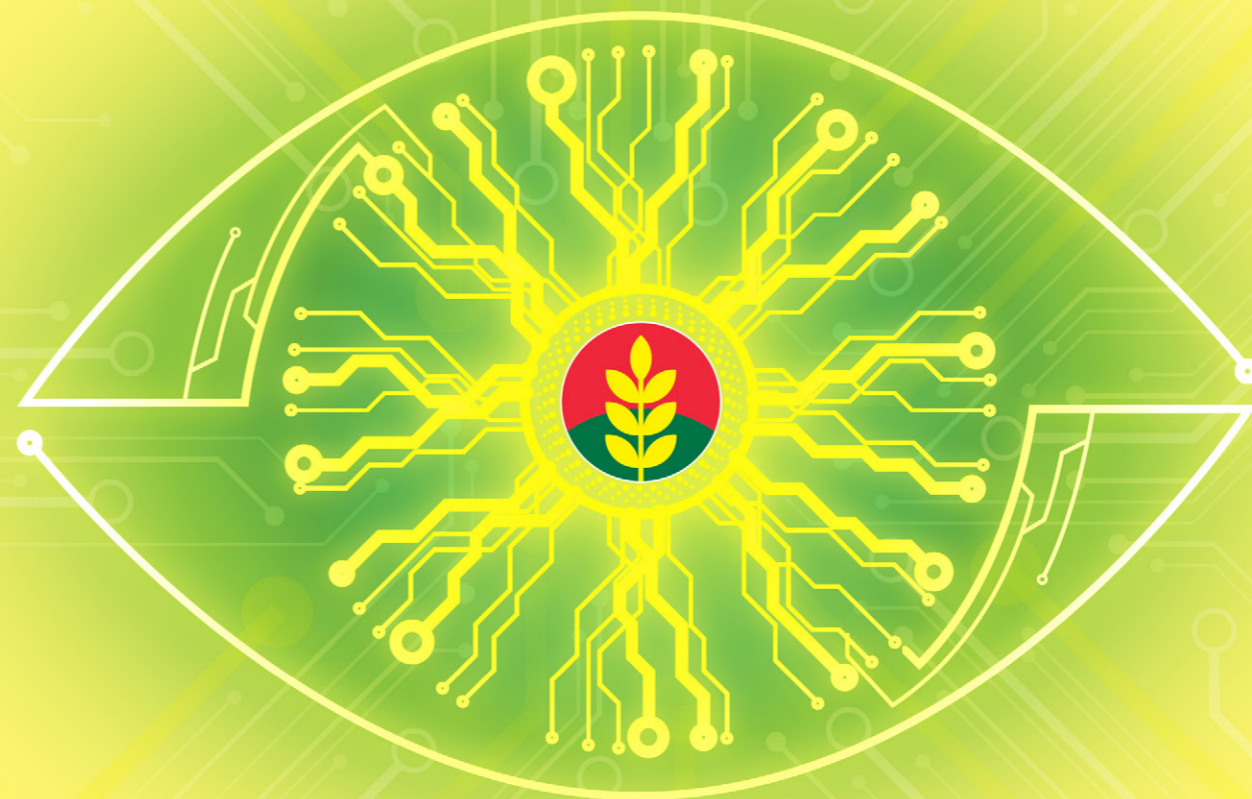


# VISION IS DEVELOPMENT ORIENTATION

## DEVELOPMENT STRATEGY

Fertilizer industry update report in 2021	48
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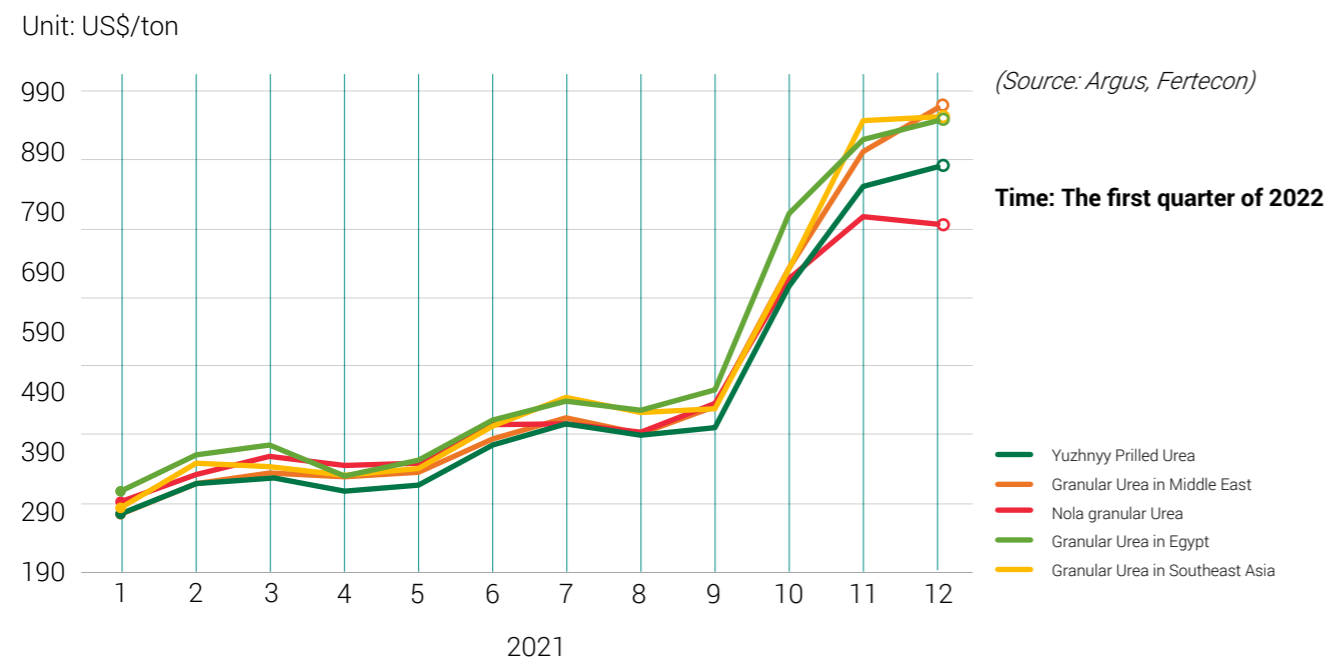
# FERTILIZER INDUSTRY UPDATE REPORT IN 2021

## GLOBAL FERTILIZER MARKET - KEY HIGHLIGHTS

### Global Urea market

- The Urea supply in 2021 was likely to be tightened as of 2020 in some regions such as China, Southeast Asia, Europe and Baltic states due to negative impacts of Covid-19 pandemic plus export restrictions of some countries and “export quota allocation” mechanism.
- Supply, transportation and delivery of Urea continued facing difficulties due to supply and transportation chain disruptions in 2020 which had impacts on flow of goods in some countries. 2021 saw port congestions with goods and containers stuck at major seaports in USA, China, Brazil, Argentina, Europe.
- Governments have been taking important steps to maintain stable domestic supplies instead of boosting export as previous time. Countries like Russia, Egypt, Turkey have proactively posed the same measures, China and Russia maintained strict control mechanisms on fertilizer export till end of June 2022 and May 2022 respectively.
- Highly maintained level of key agricultural products in 2021 has ensured fertilizer needs for farmers, especially in Latin American region (corn, soybean in Brazil, Argentina), Southeast Asia (raw palm oil in Indonesia, Malaysia).
- The higher demand of hoarding materials for NPK production in some countries has accelerated demand of Urea, especially in countries like China, Thailand, India, Pakistan, Brazil, Indonesia, Malaysia.
- Drastic price increases of Urea and difficulties during Covid-19 pandemic have made Urea “more scarce” than before.

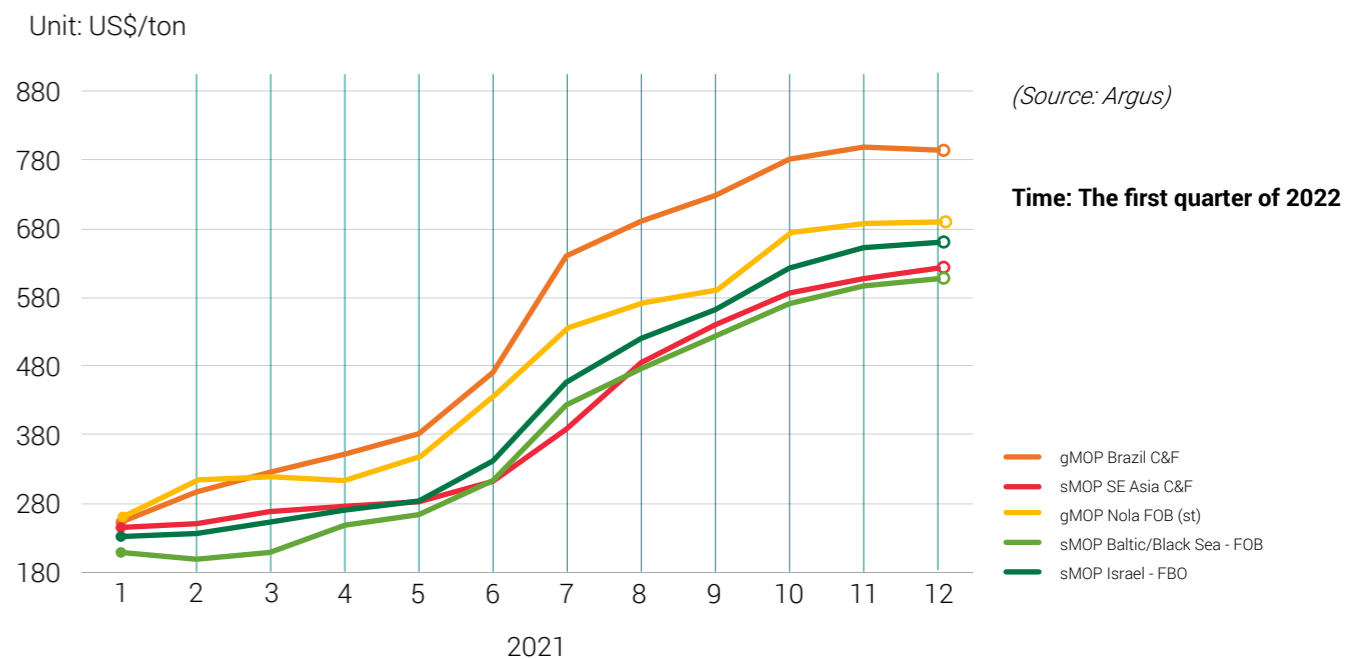
### Global monthly average Urea price development in 2021



### Global potassium market

- The higher demand of hoarding materials for NPK production in some countries has pushed demand of potassium to a sudden rise in some time (especially in China, India, Southeast Asian countries).
- Alliance/Agreements between large potassium manufacturing corporations (Canpotex, ICL, BPC, APC and Uralkali, etc.) have caused rising price of potassium as well as their proactive actions of tightening supply. Floor prices remained at US\$ 220/ton CFR in India and US\$ 230/ton CFR in China in 2020 but disappeared in 2021; countries known as main markets such as India, Brazil, etc. applied quick purchase orders to avoid higher prices due to active import price increases of potassium in some countries to purchase more products to timely meet domestic demand in high seasons, especially in largest agricultural producing countries such as USA, Brazil, Argentina.
- The fact that USA, EU imposed economic sanctions against Belarusian regime has dropped the supply of potassium in the global trade balance. As the world No.2 supplier of potassium, after Canada, with economic sanctions imposed by USA, has sharply dropped the supply of potassium of Belarus in the market, contributed to higher prices of potassium because Belarus’ traditional import partners started to seek new market.
- Price of global potassium increased sharply in 2021, at some time much higher than price of global Urea.

### Global monthly average potassium price development in 2021



## FERTILIZER INDUSTRY UPDATE REPORT IN 2021 (continued)

### GLOBAL FERTILIZER MARKET - KEY HIGHLIGHTS (continued)

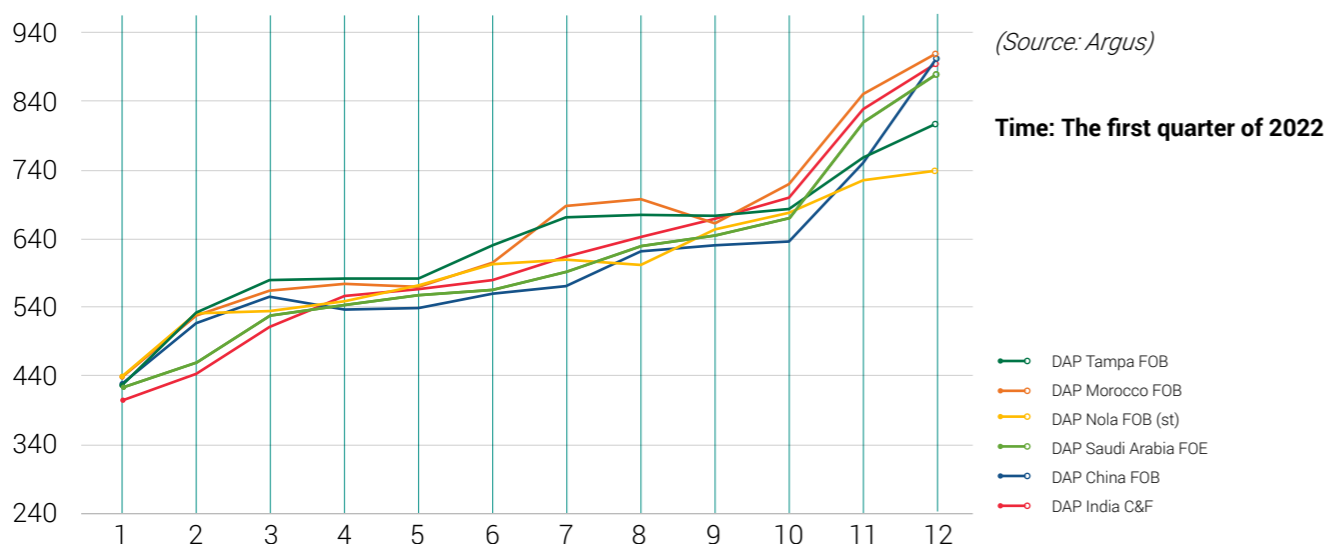
#### Global DAP market

Apart from common factors as above mentioned Urea and potassium markets, DAP market was also impacted by other factors as follows:

- The higher demand of hoarding materials for DAP production in some countries has pushed demand of DAP to a sudden rise in some time (especially in China, India, Pakistan, Indonesia, Malaysia).
- Production capacity of DAP in China, India declined due to domestic production cost higher than foreign countries. It caused high demand of DAP import to deal with economic efficiency.
- High costs of NH<sub>3</sub> and sulfur (approximately 30% to 50%/quarter) have pushed the production cost of DAP higher.
- Countries with high consumption demand of DAP have pushed price of DAP import higher to purchase more products (USA, Brazil, etc.), this has by chance pushed the price of DAP more higher in other markets.
- China's suspension of DAP exports to other countries, except for traditional markets such as South Asia and Southeast Asia, has caused a sharp decline in export volume.
- DAP price showed an upward trend in global scale

#### Global monthly average DAP price development in 2021

Unit: US\$/ton



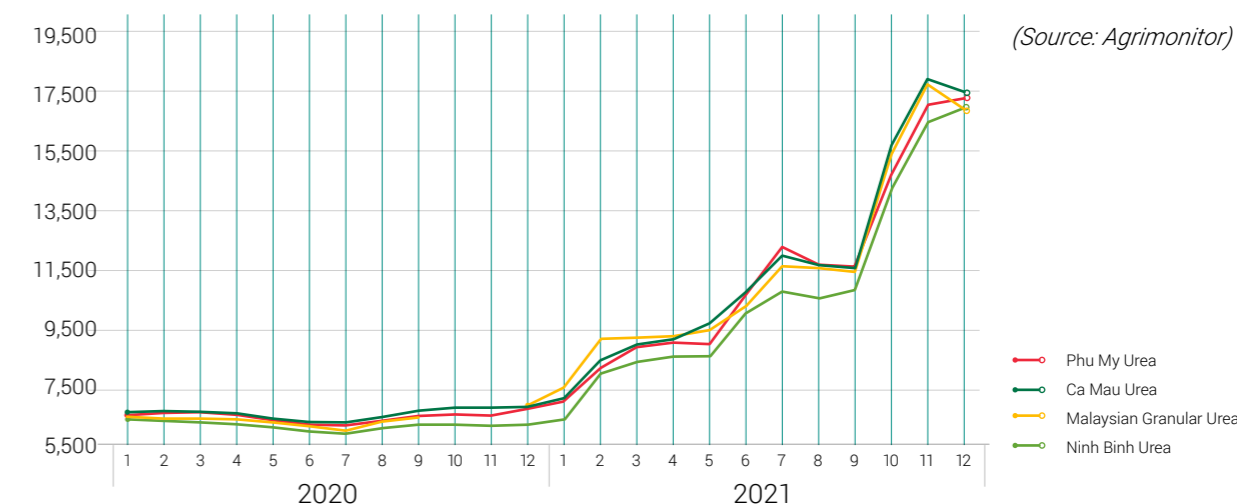
### VIETNAM FERTILIZER MARKET - KEY HIGHLIGHTS

#### Domestic Urea market

- Demand of farmers remained stable but demand for Urea fertilizer from NPK plants increased sharply (manufacturing and hoarding)
- Demand from distribution system increased, even speculation and hoarding of goods occurred in some localities in certain times.
- Urea price showed an upward trend as of 2020 due to high price of global Urea fertilizers.

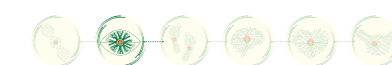
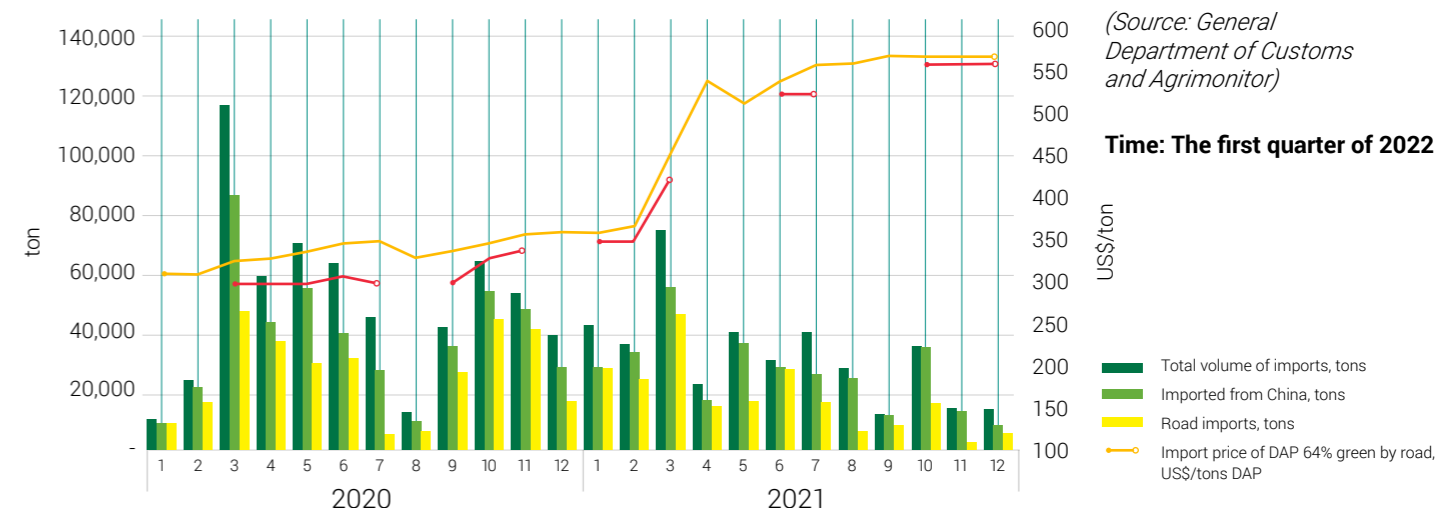
#### Urea price development in wholesale market in HCMC in 2021

Unit: VND/kg



- Psychology of "buying at any cost" occurred in the context of high demand in both domestic and global markets.
- Domestic inventories fell sharply in the first and second quarter of 2021 due to exports greater than imports or domestic low season.
- Covid-19 pandemic has caused disruptions in supply chain, transportation, delivery, loading and unloading (domestically, import and export)
- Urea Import-export in 2021:

#### Vietnam Urea import & export Diagram in 2021



# FERTILIZER INDUSTRY UPDATE REPORT IN 2021 (continued)

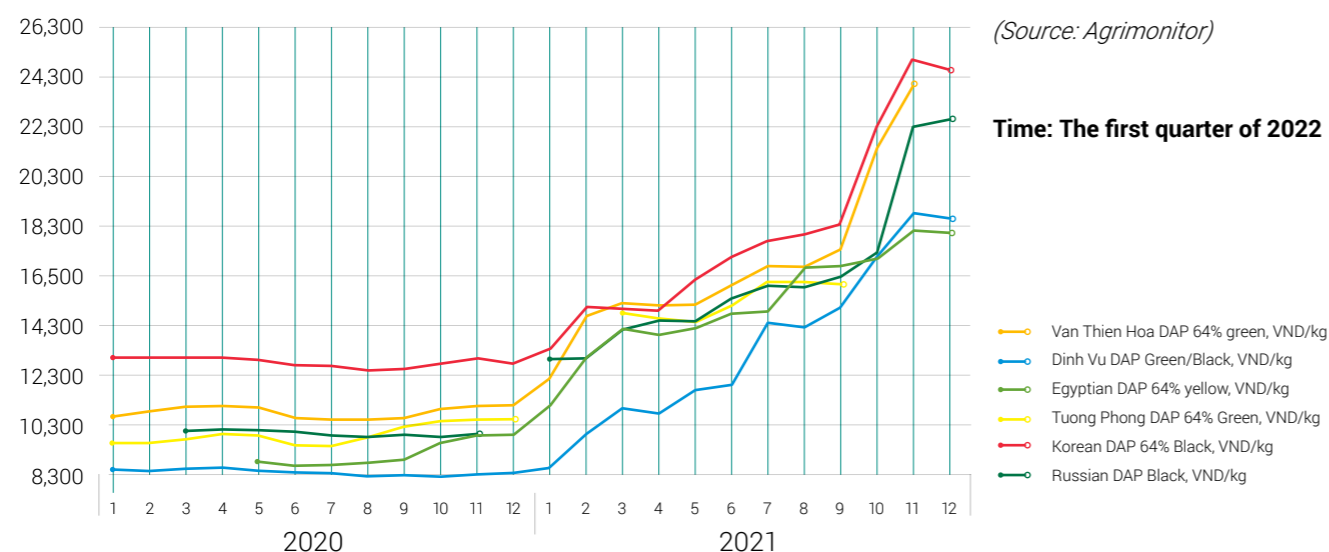
## VIETNAM FERTILIZER MARKET - KEY HIGHLIGHTS (continued)

### Domestic DAP market

- Demands of both farmers and NPK plants improved in the fourth quarter of 2021.
- Domestic DAP price increased along with global price surge but at slower speed.

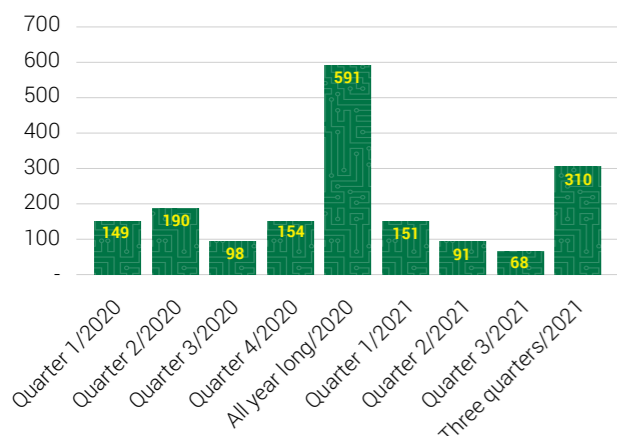
### DAP price development in wholesale market in HCMC in 2021

Unit: VND/kg

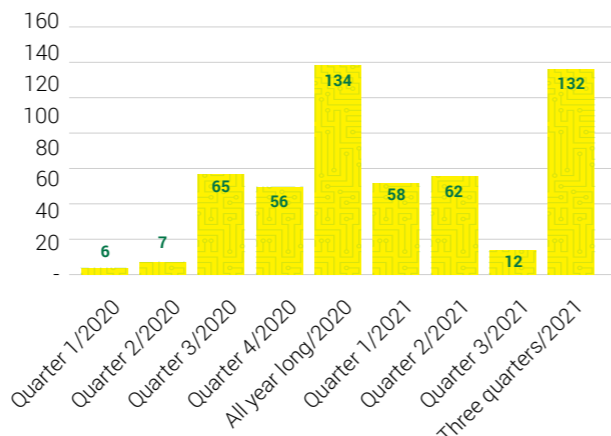


- Domestic supply declined due to disruptions in material supply, especially Apatite Ore supply for Dinh Vu and Lao Cai factories at certain times.
- The acute shortage of DAP fertilizer can cause impacts on NPK production factories.
- DAP import & export in 2021:

### DAP imports (thousand tons)



### DAP exports (thousand tons)



Time: The fourth quarter of 2021

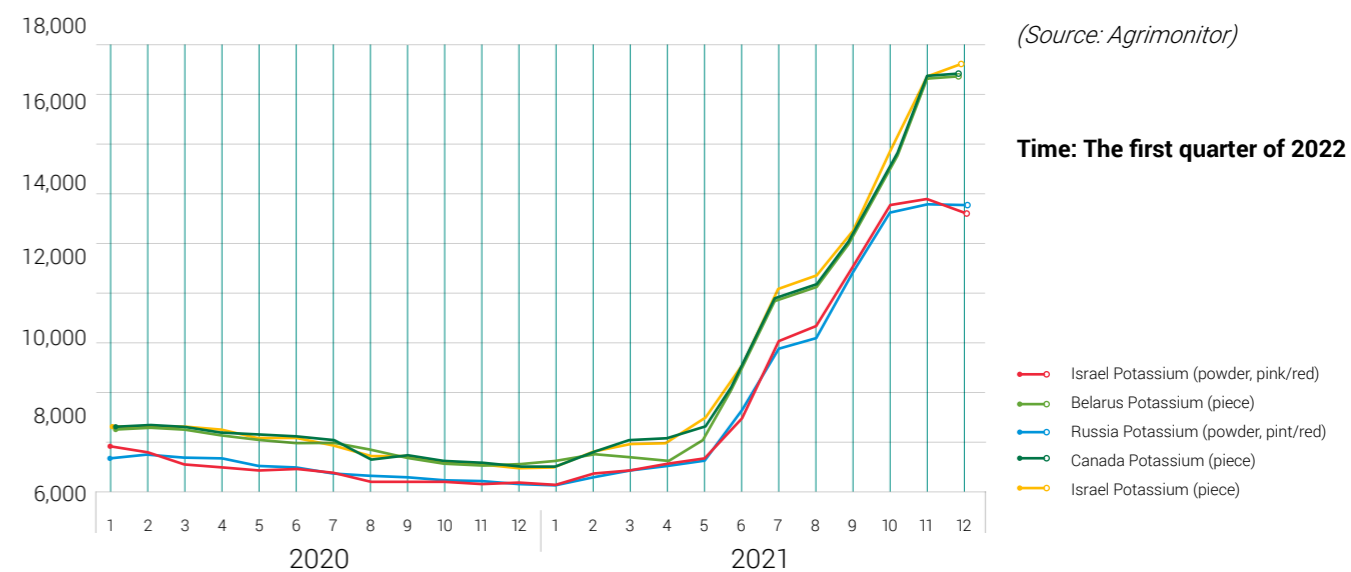
(Source: General Department of Customs and Agrimonitor)

### Domestic potassium market

- Potassium demand of farmers and NPK plants improved as of 2020. This is shown through annual potassium import data of Vietnam which always remains at over 1 million tons/year.
- Price of domestic potassium increased sharply as of 2020 due to high import prices and demand from NPK plants pushing consumer sentiment of buying and storing higher than previous years.

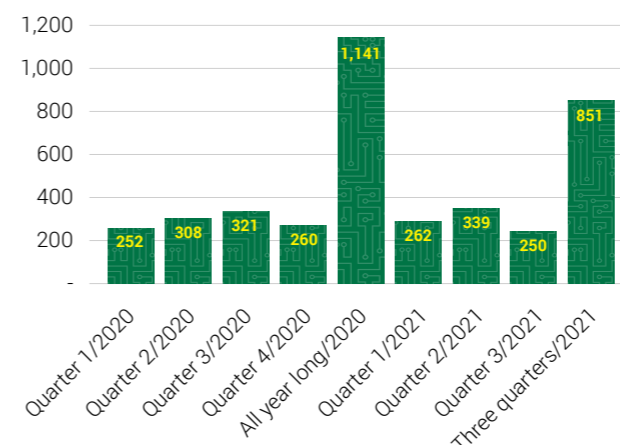
### Potassium price development in wholesale market in HCMC in 2021

Unit: VND/kg

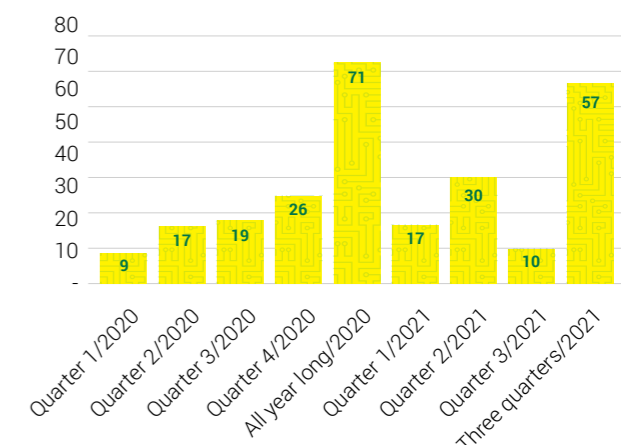


- Export of potassium increased in the fourth quarter of 2021 due to long-term signed import agreements by distributors. Besides, in order to have good proactive planning on input materials, NPK plants may proactively import a large amount of potassium in the coming months to minimize risks due to price fluctuation and supply disruptions.
- Potassium import & exports in 2021:

### Potassium imports (thousand tons)



### Potassium exports (thousand tons)



Time: The fourth quarter of 2021

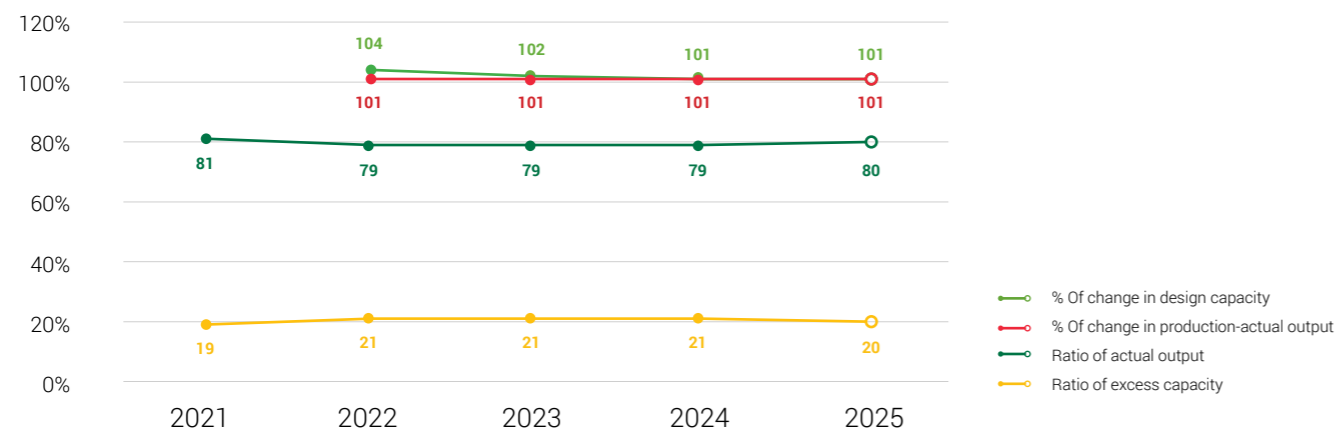
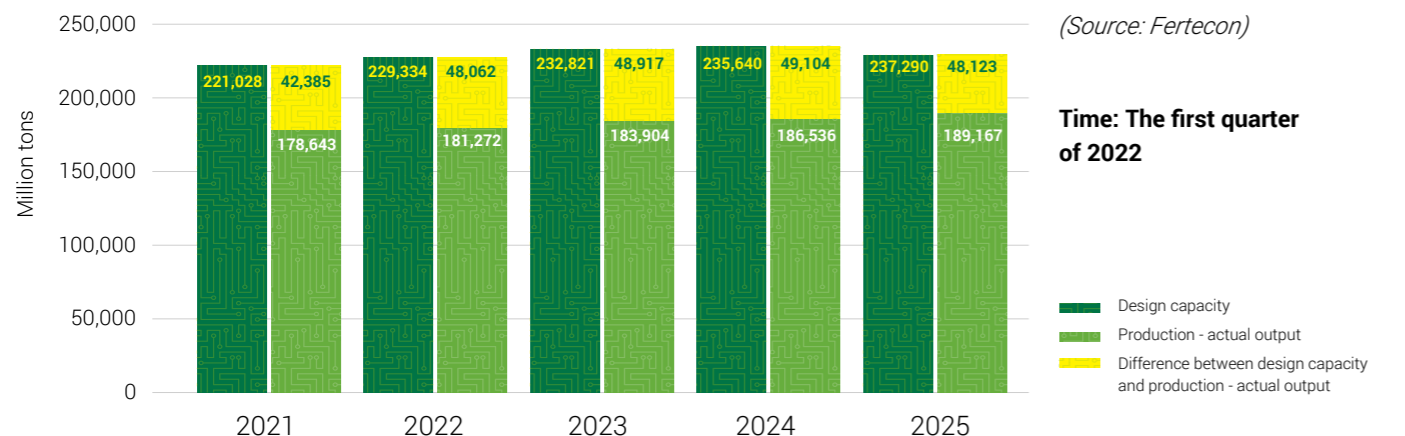
(Source: General Department of Customs and Agrimonitor)



# FERTILIZER INDUSTRY OUTLOOK 2022

## GLOBAL Urea MARKET

Forecasts on global Urea demand in 2021-2025

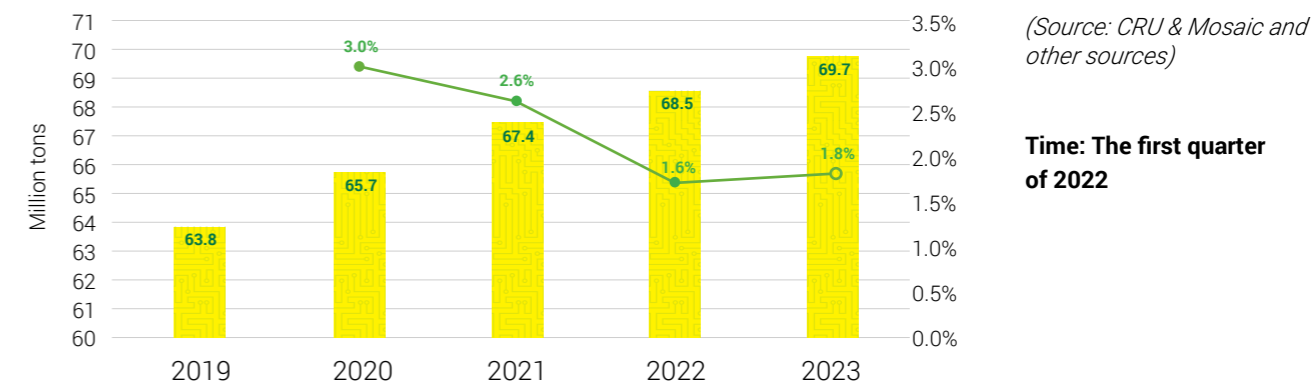


- According to Fertecon, global Urea production capacity will continue to increase in the next 5 years. In 2022, Urea production capacity will reach 229.3 million tons (up 4% as of 2022), 232.8 million tons in 2023 (up 2% as of 2022). In 2024-2025 period, Urea production capacity growth remains stable with an increase of 1% and stays at 273 million tons by 2025.
- Global production capacity of Urea will be decided by level of consumption due to currently excess capacity (actual production capacity is lower than design capacity) but at different levels amongst regions (shortages in some regions but surpluses in others). In general, production capacity and effective capacity will enjoy a slow growth in 2021-2025 period which is below 1%. Particularly, production capacity and effective capacity will reach 181.2 million tons in 2022 (up 1% as of 2021), 183.9 million tons and 189 million tons in 2023 and 2025 respectively.
- Because design capacity is higher than production capacity - actual output, so annual production capacity only reaches 79%-81% of design capacity. It means that annual surplus stays from 42-49 million tons. Accordingly, there will be a total surplus of 48 million of tons in 2022, 49 million in 2023 and the same amount in the following years.
- Based on above-motioned figures of production, consumption capacity, the ratio of surplus in production capacity of global Urea production factories stays from 19%-21% in 2021-2025 period.

## GLOBAL POTASSIUM MARKET

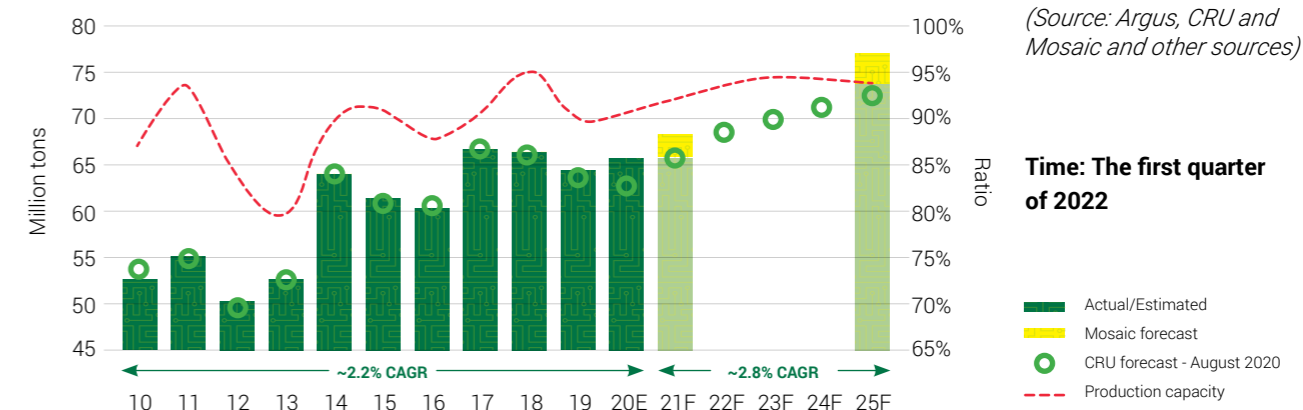
### Global demand of potassium

Potassium fertilizer demand forecast worldwide 2019-2023

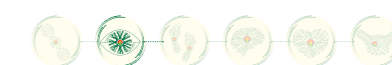
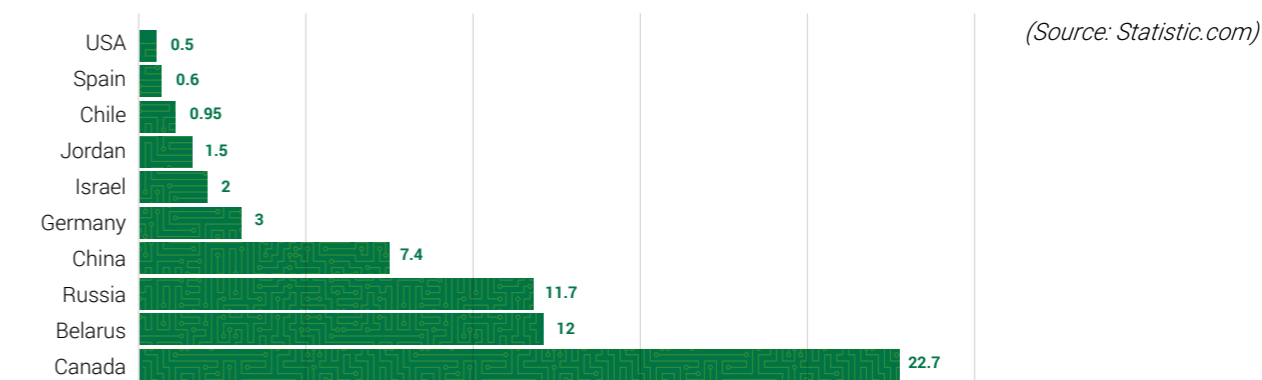


### World potassium supply

Forecasts on world potassium supply 2019-2023



### 10 top potassium countries

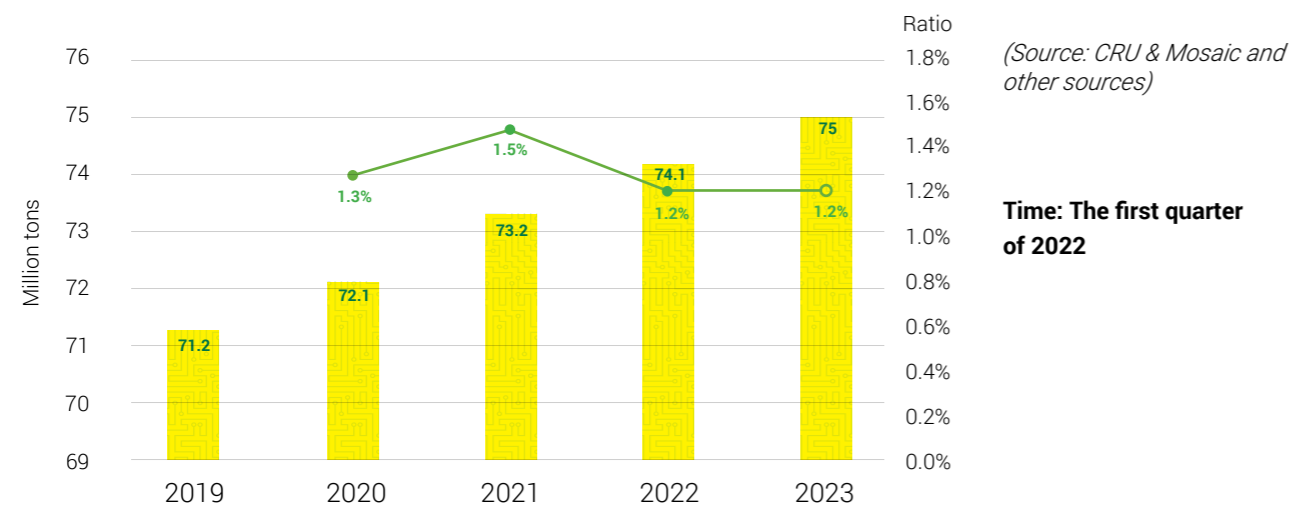


## FERTILIZER INDUSTRY OUTLOOK 2022 (continued)

### GLOBAL DAP MARKET

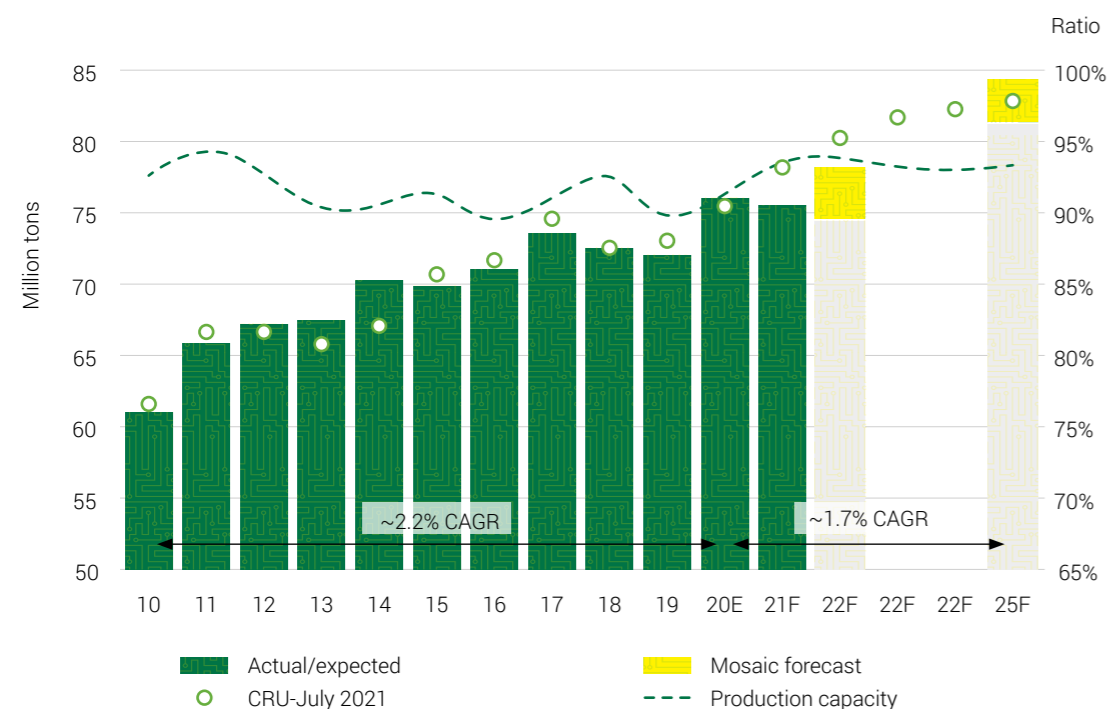
#### Global DAP demand

Global DAP demand forecast 2019-2023



#### Global DAP supply

Global DAP supply forecast



**Time: The first quarter of 2022**

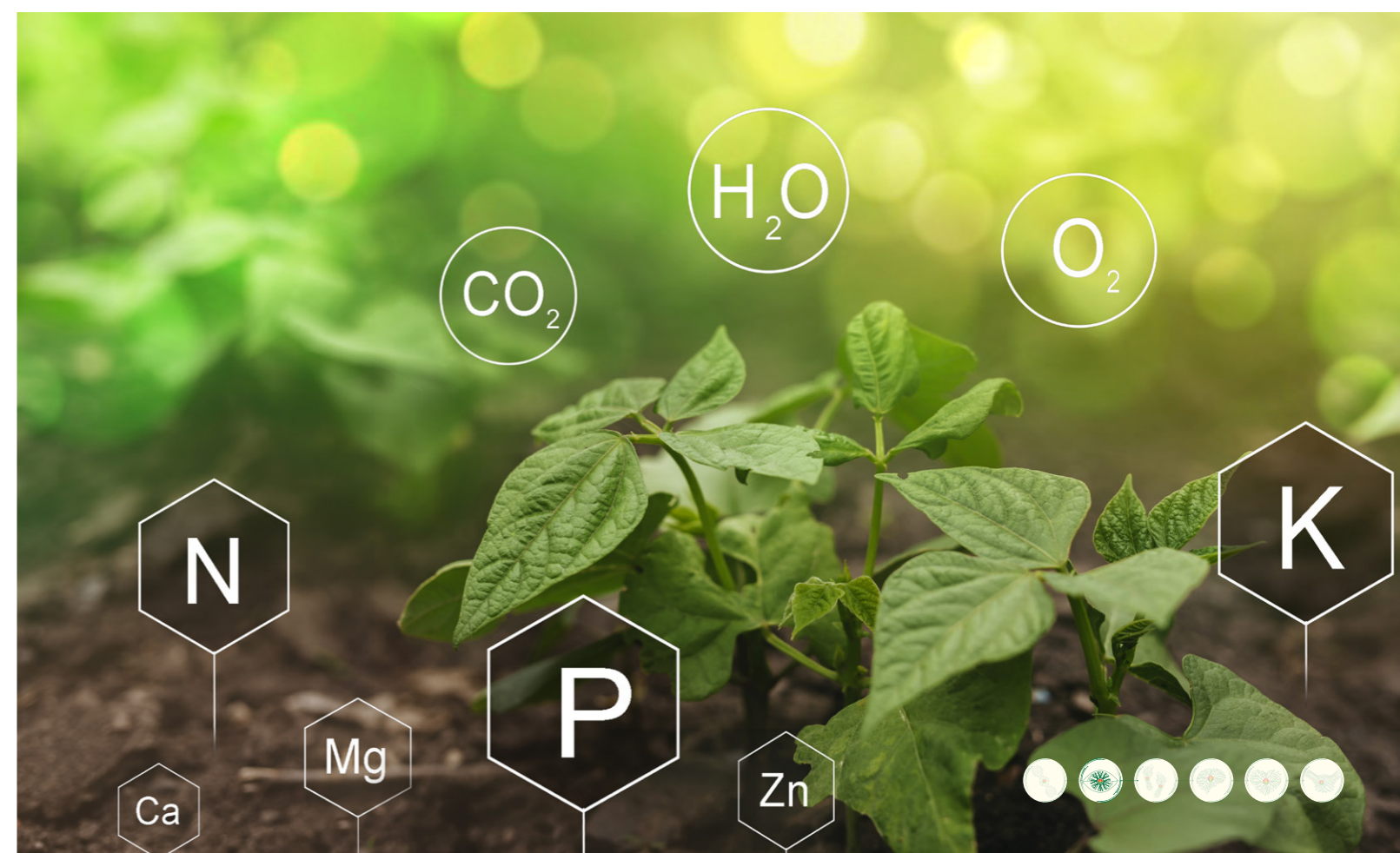
*(Source: IFA, CRU, Mosaic)*

### VIETNAM FERTILIZER MARKET- HIGHLIGHTS

Assessment on domestic fertilizer production capacity and consumption

No.	Product	Production capacity	Notes
1	<b>Urea</b>	Total annual capacity of 2.3-2.4 million tons from 4 factories	Oversupply, an annual inventory of at least 400 thousand tons excluding accumulated inventory and imported products.
2	<b>DAP</b>	3 domestic factories meet 2/3 of demand	Imports will compensate for shortfall
3	<b>Potassium</b>	Unable to produce	100% imported
4	<b>NPK</b>	> 5 million tons but actual output of 3.2-3.8 million tons/year	An oversupply of 25% to 30% excluding a total amount of 400,000-500,000 tons of imported high-class products
5	<b>Phosphate Fertilizer</b>	1.5-2 million tons	
6	<b>Others</b>	1.8-2.5 million tons	

*(Source: obtained from many sources and evaluated by PVCFC)*



## TECHNOLOGY TRENDS AND ITS IMPACTS ON FERTILIZER INDUSTRY AND DEVELOPMENT OF PVCFC

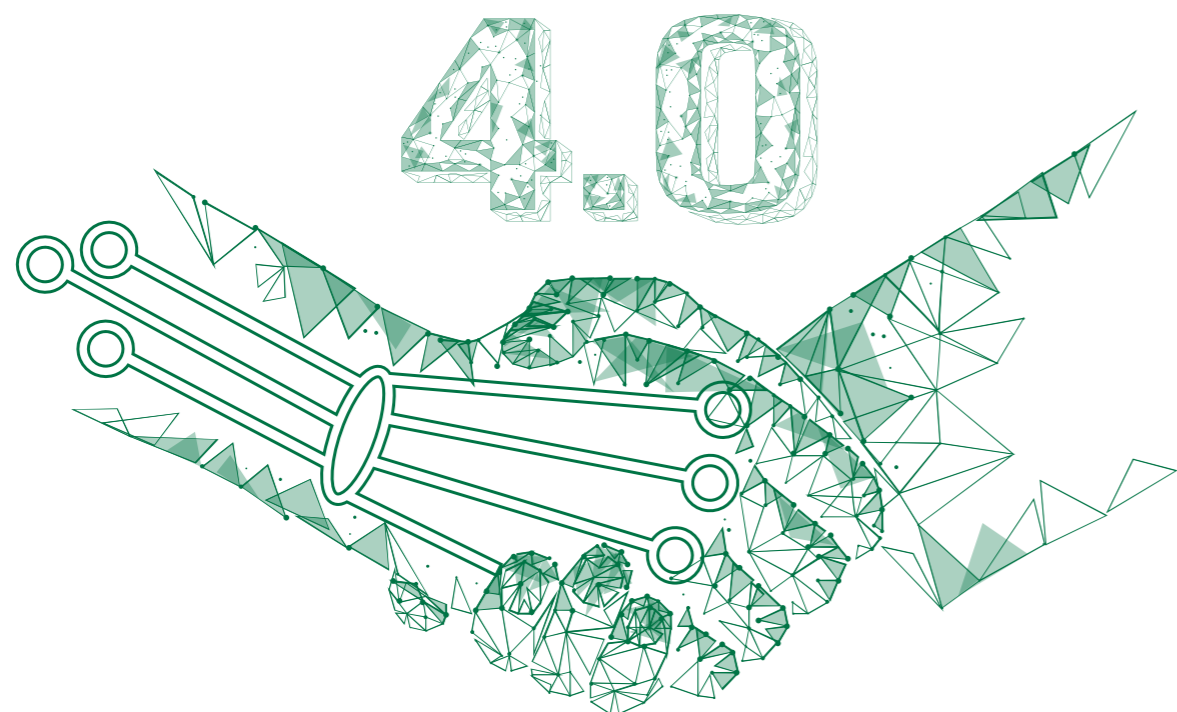


**INDUSTRY 4.0 HAS BEEN BRINGING SOLID TECHNOLOGY FOUNDATIONS FOR COMPANIES IN MANUFACTURING FERTILIZER AND IMPROVING PRODUCT AND SERVICE QUALITY, PROMOTING GREEN GROWTH AND SUSTAINABILITY FOR FERTILIZER INDUSTRY IN GENERAL AND PVCFC IN PARTICULAR.**

### DIGITAL TECHNOLOGY AND ITS IMPACTS ON FERTILIZER INDUSTRY

It is clear that big changes have been taking place at exponential growth day by day in hi-tech industries. It is of great importance and provides a significant support to improve and upgrade fertilizer business and production process from management to research, business, etc. specifically:

- Cut operating costs, shorten production process, improve production capacity.
- Diversified products with higher value and better quality serving bigger markets
- Access to more customers in longer time with significant revenue growth
- Working environment is much improved: data is collected, stored, handled and shared to support leaders to make faster and more accurate decisions thanked to timely and smooth reporting system, optimizing employee productivity.
- Attract and retain customers thanked to improvement of product and service experience, strengthen competitive position in the market.



### TECHNOLOGY FOR CREATIVITY AND INNOVATION OF PVCFC

At PVCFC, digital development has had impacts on 4 main businesses including customer experience, product - service, business - production and communication-media which have resulted in positive changes toward long - term development and sustainability on a journey to promote Vietnam agriculture development.

#### Digitalization on customer experience

2021 marked a breakthrough development of Ca Mau Fertilizer in digital customer service by launching “AI-created man” Ca Mau Fertilizer at “Vietnam Digital Human Day” event. This digital person is integrated with artificial intelligence (AI) in 3D image that can be able to interact with farmers as a professional “engineer” to provide consultancy on weather, livestock, crop, disease, etc. This is a promising brand representative to serve farmers and promote sustainable agricultural development. It is expected that PVCFC will integrate this “AI-created man” into “2Nông” App to improve farmer experience.



**PVCFC was accompanying customers to digitize product experience and improve cultivation efficiency**

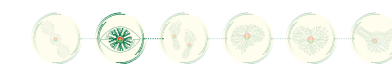
#### Product and service digitalization

##### Product

Digital transformation trend associated with high quality fertilizers will promote the use of fertilizer with higher contents of nutrients, cost efficiency, health protection and cause no environmental pollution. In 2021, PVCFC’s leading scientific experts have made efforts in successfully applying many technological achievements into business and production activities, step by step completing a comprehensive set of nutritional products for many plants including Ca Mau Urea, N46.Plus, N.Humate + TE, Urea Bilo Ca Mau. Especially, Ca Mau NPK Plant officially put into operation with modern production lines imported from EU and G7 has pioneered application of liquefied Urea technology and launched first Ca Mau NPK products to the market. These products help farmers increase the output, improve agricultural product quality, reduce fertilizer costs, meet various requirements of cultivation regions while ensure sustainable agricultural development.

##### Service

The most critical features of mobile apps have made them better than mobile websites, development of user-friendly apps make it easier for farmers to seek, shop and interact with PVCFC. By grasping this trend, PVCFC has quickly improve its service quality through technology platforms such as “2Nông” App, Ca Mau Urea App, Zalo, Ca Mau Fertilizer Facebook. As a result, PVCFC can collect user data for purposes of communication and product promotion in a more effective manner. At the same time, farmers will be also provided in-depth agricultural knowledge regarding farming practices, techniques of applying fertilizers and sowing seeds, assessing weather changes, etc. Besides, in case of necessity, the Company’s leading expert team will provide online consultancy to farmers.



## TECHNOLOGY TRENDS AND ITS IMPACTS ON FERTILIZER INDUSTRY AND DEVELOPMENT OF PVCFC (continued)

### TECHNOLOGY FOR CREATIVITY AND INNOVATION OF PVCFC (continued)

#### Digitalization on business and production activities

##### Production

PVCFC has promoted digital transformation and successfully applied SAP Plant Maintenance (PM) Module integrated with SAP platform in replacement of CMMS. SAP PM has allowed PVCFC to manage maintenance requests and perform some repairs effectively. Besides, PVCFC has successfully applied other modules: incident management, equipment and technology change management, product quality management, Barcode SAP/ERP Integration in warehouse management.

##### Business

With a network of thousands of distribution agents - close customers nationwide, PVCFC has implemented DMS (document management system) to maximize support for distribution channels, monitor activities of salesmen, inventory management and control, product coverage, liability, etc. By applying DMS has helped PVCFC to provide better products and services, timely meet customers' demand, improve the Company's competitiveness in the market.



**PVCFC has strengthened digitalization in business management to ensure good corporate governance and improve employee productivity.**

#### Digitalization on business communications

Traditional communication channels are no longer ensuring delivering timely and accurate information to serve production process, inventory management and marketing activities, PVCFC has applied CRM (customer relationship management) software to manage and enhance the company's long-term relationships with customers. Based on CRM, PVCFC can be able to collect and access customer data, solve any simple complaint and dispute in the shortest time through automatic communications and customer care system, etc. to enhance the company's close interactions with customers, improve customer service quality, boost sales performance and increase revenue.

Besides, PVCFC has used SAP ERP, Eoffice, HRM, eLearning, Workplace, etc. to connect and integrate all functions across the company, improve corporate governance performance and optimize employee productivity.

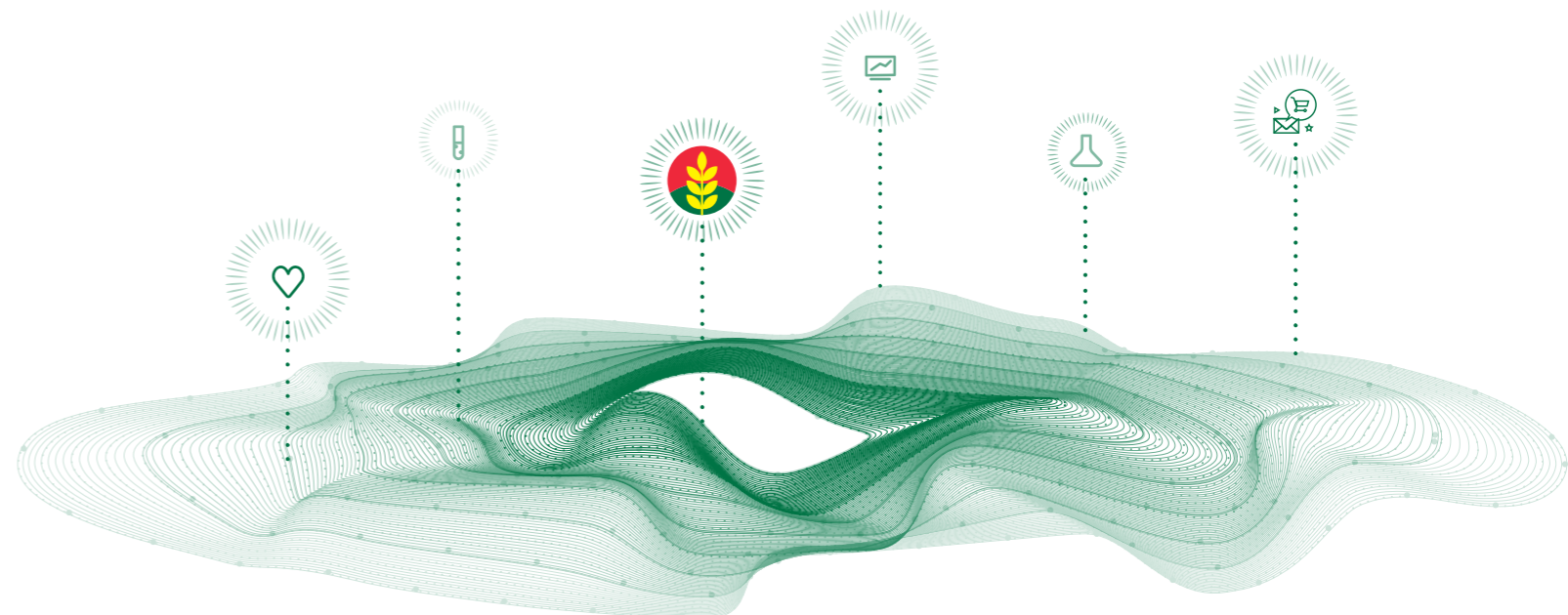
### DIGITAL TRANSFORMATION PLAN OF PVCFC 2022-2025

In general, technology innovation toward sustainability is an inevitable trend which is in line with new development trend of fertilizer industry. Not only does it create breakthrough changes for PVCFC but also bring positive impacts to stakeholders for Vietnam agricultural development. However, it also poses challenges for PVCFC, it requires each leader and employee to pursue new perspectives and innovative approaches ahead of big changes in today's scientific and technological revolution.

As a leading fertilizer production company in Vietnam, PVCFC is now ready for pioneering digital transformation in 2022-2025 period with specific plans as follows:

- Complete Data Warehouse platform and connect App system on IT platform
- Apply one of digital technologies including AI, IoT, Machine Learning, Big Data, Cloud to promote business and production process automation
- Seek digital solutions for business and production activities
- Upgrade SAP ERP system to S4HANA

Hopefully, with past experience, spirit of solidarity and high determination to turn upcoming plans and strategies into success, PVCFC will open a new decade of breakthroughs in IT application, bringing the company to the next height in the next journey.





# CA MAU FERTILIZER VALUE CHAIN

## SUPPORTING DEPARTMENTS

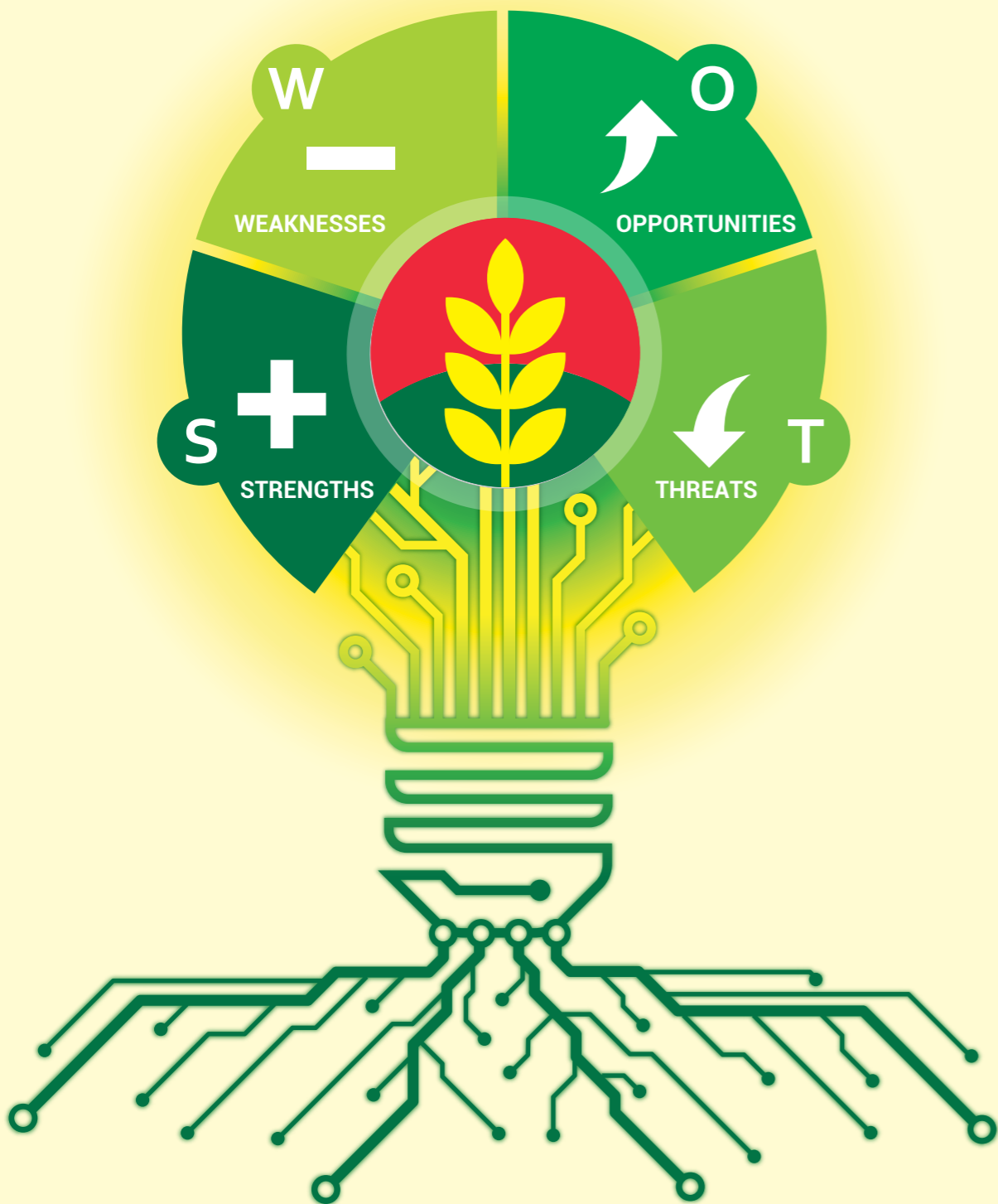
Direct: Big Data, Finance & Accounting, Technical & Information Security, Supervisory Board, etc.  
Indirect: Human Resources, Investment & Planning, Trading, etc.



## CUSTOMER SERVICE & SUPPORT (Supporting for end consumers)

- Call Center
- Customer Service
- Complaint handling, etc.

# SWOT ANALYSIS



## STRENGTHS

### Active supply of input gas

The supply of gas to Ca Mau Fertilizer Plant is done via long-term purchase contracts signed with foreign partners in accordance with the regulations of PetroVietnam, in which purchase price is based on the international price and common practices in the world market.

In general, with the price agreed among the parties and in the current situation, at least in medium term, the supply of gas for Ca Mau Fertilizer Plant is ensured continuously and stably, enabling the plant to focus on production, enhance productivity and take advantages of scale with the purpose of reducing production cost and improving competitiveness in the market.

### Maintaining market leadership

During the past time, PVCFC has been one of the leading enterprises in Urea when positioning and leading the market in terms of market share, brand, selling policy and ability to adjust selling price in each period, in short term, middle term and long term.

Given awareness of role and mission of a producer providing nutritional solutions for plants, PVCFC focuses on its position in the industry. The Company always ensures competitiveness with domestic producers and gradually compete with overseas products. The Company also maintains a certain gap in selling price with other same products and does not participate in negative price wars that reduce internal power and strength of enterprises.

In the coming time, with the establishment and operation of NPK Plant, PVCFC will make increasing efforts to promote this role in NPK market to become a reputable enterprise not only in Vietnam but also in South Asia.



## SWOT ANALYSIS (continued)

### STRENGTHS (continued)

#### Strong and market-covered Tier 1 and Tier 2 distribution system

Tier 1 and Tier 2 distribution system is strong and covers market, especially the key markets in the South and Cambodia which creates a firm foundation for PVCFC to deploy its focus strategy, with selection and priority, for the purpose of optimizing revenue, selling price, and business efficiency. At present, more than two-thirds of PVCFC's sale volumes come from Mekong Delta market; therefore, the planning of production and business is always done to ensure the harmonious benefits between manufacturers and distribution systems at all levels.

To further exploit the potential from the existing distribution system, PVCFC has strengthen using technology information to serve sales, supply chain and distribution across the country. In recent years, the Company has push to apply and deploy significant IT projects such as ERP, Big Data, DMS, CMS, etc. with different levels to effectively exploit IT, market data, and distributors by regularly updating information about demand, consumption, and inventory. Accordingly, the Company has increasingly improved supply capacity, timely meeting the needs of distribution system, reducing intermediate costs, step by step reaching an advanced, consistent and continuous business model named "Just in Time", based on models and lessons successfully referenced from multi-industry corporations in the world.

#### Streamlining sales system for cost saving

In order to reduce product costs, in addition to reducing production costs, PVCFC actively establishes a streamlined sales system, minimizing business focal points, distributing from producers to consumers.

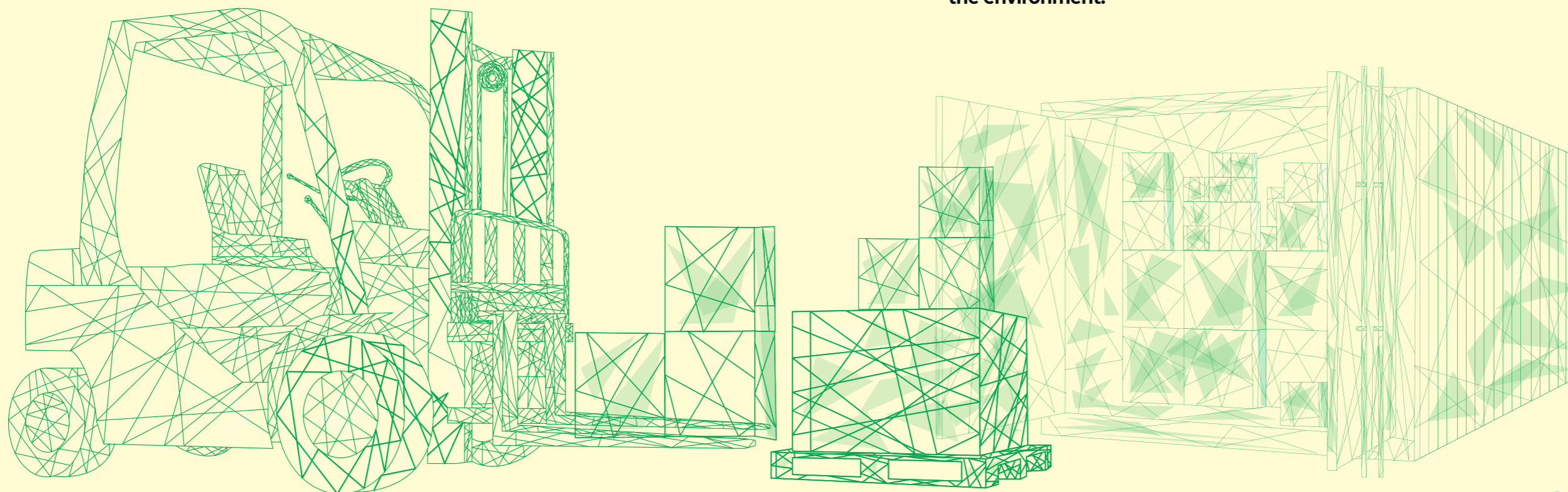
In particular, at the business focal points of PVCFC, regional distribution system is set up based on the most streamlined organizational structure, prioritizing to use the local sales teams who understand the market, the industry, the local culture, etc. but still ensuring to complete the highest purpose - monthly/quarterly/yearly business targets which are assigned to each region, manager and staff. This not only requires the activeness and the creation of managers of all levels but also encourages sales staff to be results-oriented and get compensation as their performance. Above all, it is required to streamline sales system with timely updating market situation and competitor information to meet diverse needs and strict requirements of distribution system and consumers.

In the coming time, to further promote and optimize distribution model, PVCFC continues to research and test new forms of distribution on the basis of ensuring harmonious interests of manufacturers - distributors - consumers. With IT application to production, sales and distribution, PVCFC considers this is one of the most effective and important instruments to maintain its firm positions in both local products and imported goods.

#### Gradually improving business efficiency of tangible assets and increasing intangible asset value

In addition to maintaining the harmonious interests among manufacturers - distributors - consumers, as other enterprises operating in market economy, PVCFC always makes every effort and is committed to the most important goal for shareholders, including State shareholders, major shareholders, strategic shareholders and common shareholders. PVCFC has increasingly strives to improve financial indicators i.e., ROA, ROE, EPS, etc. Working with financial institutions, foreign investment funds, in general, PVCFC has received positive assessments on financial indicators and sales growth. In the coming time, the Company strives to increase value of intangible assets such as brand, copy right, technology, invention and solutions in production, business and R&D to enhance market value of assets.

#### Actively applying new technologies in research and production, diversifying products in the direction of improving quality, increasing efficiency and protecting the environment.



## SWOT ANALYSIS (continued)

### WEAKNESSES

#### Production cost is still a relatively disadvantage compared to other countries

Due to many reasons, PVCFC's Urea production cost is still quite high as compared to some other countries. Production cost in some countries is less than \$200/ton because they have advantages in resources and less investment costs. Many of them are in Middle East and Baltic region possessing abundant oil and gas resources and having a developed oil and gas industry.

In Asia, some plants in Indonesia, Malaysia and China also have competitive and lower production costs than PVCFC's. Therefore, PVCFC faces certain disadvantages in export market in comparison with the manufacturers in those countries. In addition, the competition pressure is higher for PVCFC and other enterprises in the same industry when the source of cheap goods from the above-mention market is imported to Vietnam at some time points.

#### Logistic cost occupies for a high proportion, limiting long-term competition

Inland waterway transport capacity in Vietnam accounts for a small proportion compared to railway transport, which occupies for 80% of the total cargo traffic of the country. Logistics activities in supply chain and fertilizer distribution from Ca Mau Fertilizer Plant to many domestic markets are carried out by

multi-modal transport (waterway, railway, etc.), leading to a remarkable cost arisen, from 8% to 15% of selling price, in each specific time. This cannot be settled down early in medium-term or long-term and depends on many intermediaries, thereby affecting PVCFC's product distribution to domestic consumers.

#### Some niche markets have small scale, not meeting business optimization requirement

Vietnam's fertilizer industry has a visible feature that, in popular consumption segments, there are many product lines and types of fertilizers with different formula provided by many distributors; therefore, the competitive pressure is very high. Price wars regular take place among the distribution channels of PVCFC as well as between PVCFC and its competitors.

To solve this problem, especially to reduce inventories and diversify products, PVCFC has researched and assessed market to launch new fertilizers with higher value and less competition as compared

to the common ones. However, after a time, new products, in spite of being accepted by consumers and having good consumption, still have a quite small market share and has not promoted the potential and production strength of PVCFC.

In general, some new product lines initially meet the requirement on revenue and profit. However, there are some products with low sales volume, not meeting target in spite of bring high profit rate. Therefore, in the coming time, PVCFC needs to settle down this problem to enhance business performance.



### OPPORTUNITIES

#### Well exploiting opportunity from fertilizers for rice and fruit trees in Mekong Delta

Mekong Delta is the largest fertilizer consumption market in Vietnam with the demand from farmers on Urea from 680,000 to 720,000 tons/year, DAP from 360,000 to 390,000 tons/year, Potassium from 220,000 to 260,000 tons/year, NPK from 800,000 to 1,100,000 tons/year and other fertilizers from 1,000,000 to 1,200,000 tons/year.

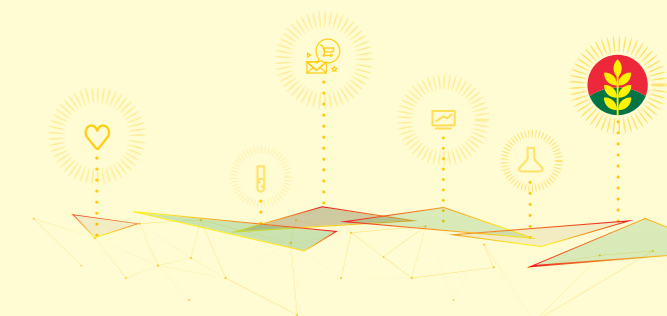
Ca Mau Fertilizer Plant is located in Mekong Delta. This is the largest market in the country with potential agricultural and aquatic development, in which rice and fruit growth and export are the regional strength. Annual rice cultivation area is stable at 1.6 million hectares with 2 main crops of Winter-Spring and Summer-Autumn, excluding the third crop with an area of 650,000-750,000 hectares operating under export orientation (rice export of Mekong Delta account for 80% of total annual rice export, from 6 - 7 million tons, valued at more than USD 3 billion/year). It can be seen that with the Urea market share of 60%-65% at Mekong Delta, this is an advantage that many other enterprises in the same industry are difficult to have. In two recent years, price of rice collected from farmers and exported has been remarkably improved, facilitating the farmers to rest in mind to cultivate and make more investment into crops. Thanks to that, PVCFC can maintain stable market share in terms of Urea, Potassium, NPK, and new products.

For fruit tree market, area of land for growing fruit trees in Mekong Delta accounts for more than 60%

of total fruit tree area in the country of more than one million hectares, in which many products are provided to the processing companies in the region for domestic consumption and export. In the coming years, this will be a major market share for new products and NPK products of PVCFC. According to economic experts and scientific research teams, if being invested appropriately, the economic efficiency from fruit tree market will be higher than that of rice growth. Therefore, the potential development of fruit trees in Mekong Delta is expected to bring more opportunity and to improve in the future. This will help PVCFC develop and new products and NPK products as well as give nutrient solutions serving the regional development in the future.

For vegetable market, with a large cultivation area, distributed in fertile lands stretching across low-lying areas along the basins of Tien Giang and Hau Giang rivers with a short cultivation time has created favorable for PVCFC to expand new fertilizers and high-value organic fertilizers, making a great contribution to supporting the supply chain of "green - clean - beautiful" vegetable products that are suitable to consumer taste and gradually meet the demand of retail supermarkets of the large domestic and foreign corporations.

With the largest Tier 1 and Tier 2 distribution system in the country, PVCFC has been gradually maintain and develop market share of strategic products, contributing more than two thirds of revenue from product consumption in Mekong Delta.



## SWOT ANALYSIS (continued)

### OPPORTUNITIES (continued)

#### Taking advantages from industrial trees in Southeast and Central Highlands

**Southeast and Central Highlands** are potential markets for fertilizers serving industry trees, in which the demand for Urea consumption is from 180,000 to 220,000 tons/year; NPK from 1,100,000 - 1,200,000 tons/year; Potassium from 130,000 - 160,000 tons/year; and DAP from 40,000 - 50,000 tons/year; and other fertilizers from 500,000 - 650,000 tons/year.

According to statistics, most of coffee and rubber trees in Vietnam are concentrated in the Southeast and Central Highlands, of which coffee is allocated in 3 provinces i.e., Dak Lak, Gia Lai, and Lam Dong in Central Highlands, with area of more than 600,000 hectares. Rubber trees with area of more than 930,000 hectares are allocated in the Southeast beside some other crops such as pepper, cashew, tea, cassava, etc. In general, demand of NPK, SA and Potassium is quite high in these two regions. At present, the prices of coffee and rubber are recovered which is an important factor deciding the demand on fertilizers of the farmers. PVCFC is focusing to expand distribution channels to provide high-value products including new fertilizers, organic fertilizers, NPK and Potassium fertilizers to serve the high-value crops in the regions.



#### Expanding and developing Cambodia's and international market

**D**uring the past years, Cambodia has been a target market playing an important role in PVCFC's development strategy with increasing fertilizer consumption, contributing to improving sales volume and increasing profit for the Company. As for market potential, annual demand for Urea is from 380,000 to 410,000 tons/year; DAP from 250,000 to 280,000 tons/year; NPK from 260,000 - 300,000 tons/year, excluding other fertilizers. The good exploitation of this market opportunity creates an important premise for PVCFC to conquer and expand the market share for product branched "Ca Mau Fertilizer" in Cambodia.

At present, consumption volume of Ca Mau Urea at Cambodia accounts for 35% - 40%/year and in the coming time, PVCFC orients to develop NPK products from 15% - 20% which is expected to create a breakthrough in business strategy at Cambodia in particular and in the Southeast Asia in general in parallel with expending portfolio abroad.

Apart from Cambodia, as mentioned-above, PVCFC orients to expand market to the countries in Southeast Asia, South Asia and Latin with potential market such as Thailand, Myanmar, Philippines, Bangladesh, Nepal,

Sri Lanka, India, Brazil, etc. These markets have high and stable fertilizer consumption, promoting competition in selling price and product quality, leaving certain reputation when approaching and developing these markets during the past years. The expansion of these export channels has an essential meaning in the context highly seasonal fertilizer industry in Vietnam (peak in Q2 and Q4), thereby, helping PVCFC to improve sales volume in domestic low periods (Q1 and Q3), maintaining stable cash flow, ensuring reasonable inventory, minimizing selling and warehousing costs and significantly improving business efficiency in production and business.

#### Domestic demand on fertilizer slightly increased in 2021

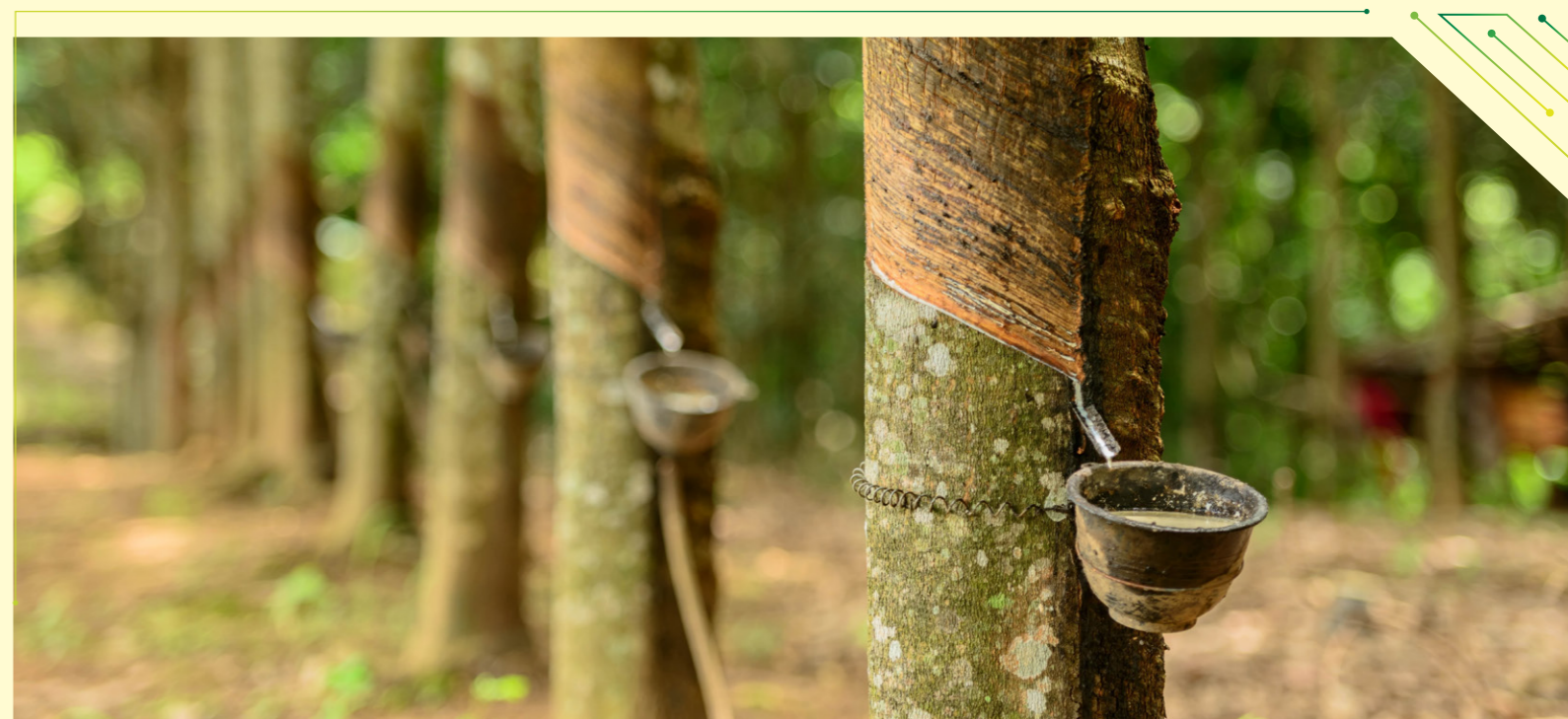
**C**onsumption of fertilizer is forecasted to reduce in 2022 compared to 2021 due to the increase in price of fertilizer and input materials. However, the Company still maintains consumption proportion in some major markets in 2022. It was estimated that the demand on Urea products in 2021 was 2.16 million tons in the whole country, an increase of 113 thousand tons, equivalent to 5.5% compared to 2020 due to the increase in direct consumption and demand on raw material of NPK plants. This improvement in demand received the support from price of agricultural products, especially the price of rice which kept a higher price level than that in the previous years, in both rice collected from the farmers and exported. DAP market was mainly domestic consumption, occupying

for more than 50% and the remain was provided to NPK plants. National demand on DAP was estimated as 887,000 tons, in which the Southwest market occupied for 45%; NPK plants occupied for 46%. For Potassium, it was estimated that the demand on Potassium in 2021 reached 913,000 tons, increasing by 5% from 2020 to meet the domestic demand which increased in some regions, especially the increasing demand from NPK plants.

That the production of organic agricultural products or in organic trend and the use of high-quality fertilizer products is getting more popular is the motivation for PVCFC to develop new products to improve revenue and optimize profit in the coming time.

#### Increasing domestic consumption

**A**ccording to Fitch Solutions, it is forecasted that consumer spending in Vietnam for essential goods in 2022 will continue to increase compared to 2021. Accordingly, spending on food and foodstuffs is expected to increase by 10.5%; rice, cereals, and bread by 10.4%; meat and animal feed by 10.1%; vegetable oils and fats by 10.6%; fruits and beverages by 10.8%; vegetables by 10.5%; sugar by 6.4%, etc. This increase in domestic consumption trend will create an important foundation to support Vietnamese agricultural market this year and the following years.



## SWOT ANALYSIS (continued)

### THREATS

#### Input material expense

In general, input material price of Urea production is forecasted to increase compared to that in 2020. This will cause direct effects to production cost and affect competition ability in the sector, particularly in comparison to the surrounding countries such as China, Indonesia, Malaysia and further countries with high competitive advantages in the Middle East and Baltic.

#### Price to import Potassium and DAP to Vietnam increased in 2021, leading to increase in input expenses of NPK plant.

**Regarding Potassium**, the import is mainly from the major supply sources in the world such as Canada, Russia, Belarus, China and Israel. Statistics show that potassium imports from these markets account for more than 90% of total supply of potassium imports into Vietnam. In the past years, since some corporates have actively reduced supply sources together with the complicated geopolitical context in the world such as Russia-Ukraine conflict, which has caused serious effects on fertilizer production in Baltic and Black Sea regions; interruption of transportation and supply activities; many major markets such as Brazil and Europe are looking for new alternative sources of supply from Russia and Belarus but not being successful, Potassium price continues to escalate.

**For DAP**, since domestic production cannot meet the demand, Vietnam has to import DAP. The effect from the world's DAP price, especially China, which meets more than 70% of DAP imported into Vietnam. At present, domestic DAP supply in China is tightened and DAP price tends to increase; therefore, it is likely that the DAP price in 2022 will continue to remain much higher than the average price in 2021.

#### Transport freight

The trend of increase in sea freight in recent quarters and the rapid increase of cruel oil prices in recent times in the world has made domestic gasoline prices increase nearly to VND 30,000/liter and there are any signs of decrease. Therefore, that transport freight of goods in general and of fertilizer in particular in Vietnam will increase from 20% to 30% in 2022 is likely to happen, affecting domestic selling prices and decreasing profit of fertilizer enterprises when the increase of transport freight is higher than the increase of selling price in domestic market. In addition, the increase in transport freight in the world has limited the demand on new purchase from international market, decreasing production export of PVCFC.

#### Law on VAT

The Government's Resolution No.159/NĐ-CP dated 28 October 2020 to submit to National Assembly for approval a resolution on VAT on fertilizers is a good sign, but the National Assembly Standing Committee concluded that the relevant agencies need to review and add more information to agenda at the meeting in March 2022. Whenever this law is not approved by the National Assembly, PVCFC and other companies in the same industry still have to bear large input costs, directly affecting business performance.

#### Impact from Covid-19 pandemic

The year 2021 continued to witness heavy impacts of Covid-19 pandemic on the world economy in general and Vietnam's economy in particular. For fertilizer sector, the pandemic affects both supply and demand.

**For demand**, the most obvious impact on consumers was the decrease in demand for goods due to lower income; agricultural products were stagnant at border gates and bonded warehouses; many contracts to export agricultural products from Vietnam to the world market were canceled, causing risks for suppliers, exporters and many companies. Agricultural product price was uncertain; input material price increased, affecting demand for fertilizers of farmers.

**For supply**, many production projects were slowly deployed, causing high costs. At some times, fertilizer import and export activities were stopped due to regulations on disease control of foreign governments; shortage of workers was common in many ports; and transportation and circulation of fertilizer products were delayed. Some export shipments were delayed, causing unnecessary costs.

PVCFC leaders were inspecting experimental garden



## DEVELOPMENT ORIENTATION

### DEVELOPMENT ORIENTATION IN 2022

#### For restructuring

Coordinating with relevant focal points to implement programs and plans in corporate restructuring project according to the roadmap prescribed by Vietnam National Oil and Gas Group in the period of 2021 - 2025, immediately after being approved by authorities.

#### For governance and management

Completing management system according to the best corporate governance practices in order to enhance the Company's competitiveness, thereby contributing to enhancing the Company's value in the market.

#### For production

Ensuring production activities of key products such as Urea, NPK, and new products based on Urea effectively, stably, safely and optimizing plant capacity.

#### For optimization

Researching, implementing and applying projects and programs on optimizing and saving energy and materials that have been tested in practice to further improve efficiency of Urea, NPK and new product production complexes.

#### For business

Continuing to maximize consumption of products produced by Ca Mau Fertilizer Plant and Ca Mau NPK Plant, on the basis of maintaining reasonable inventories and supplying enough goods for domestic market and partly export in low season with reasonably balancing supply and demand of domestic products. Maintaining and promoting import and export activities to optimize raw materials for NPK plant and at the same time organizing effective self-trading products in line with market development orientation in each region of Vietnam and in Cambodia.

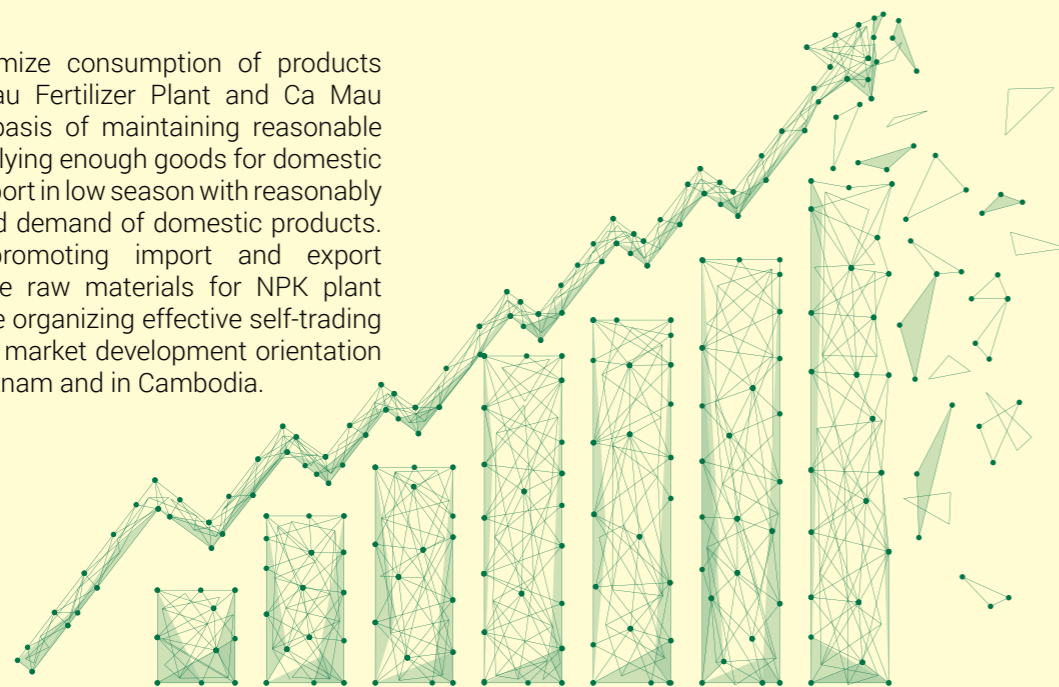
#### For brand

Continue to invest and implement marketing campaigns and programs to increase awareness of NPK products in target markets. Accordingly, it is necessary to focus on market development, distribution system and increasing awareness of Ca Mau NPK in key strategic markets, especially in Southwest, Southeast and Central Highlands. At the same time, promoting consumption of organic products under "nutrition product package" policy according to customer segmentation strategy and customer orders to optimize business efficiency at sales points.

Completing database of "2Nông" App and "AI-created man" to effectively support interaction with farmers.

#### Covid-19 pandemic control

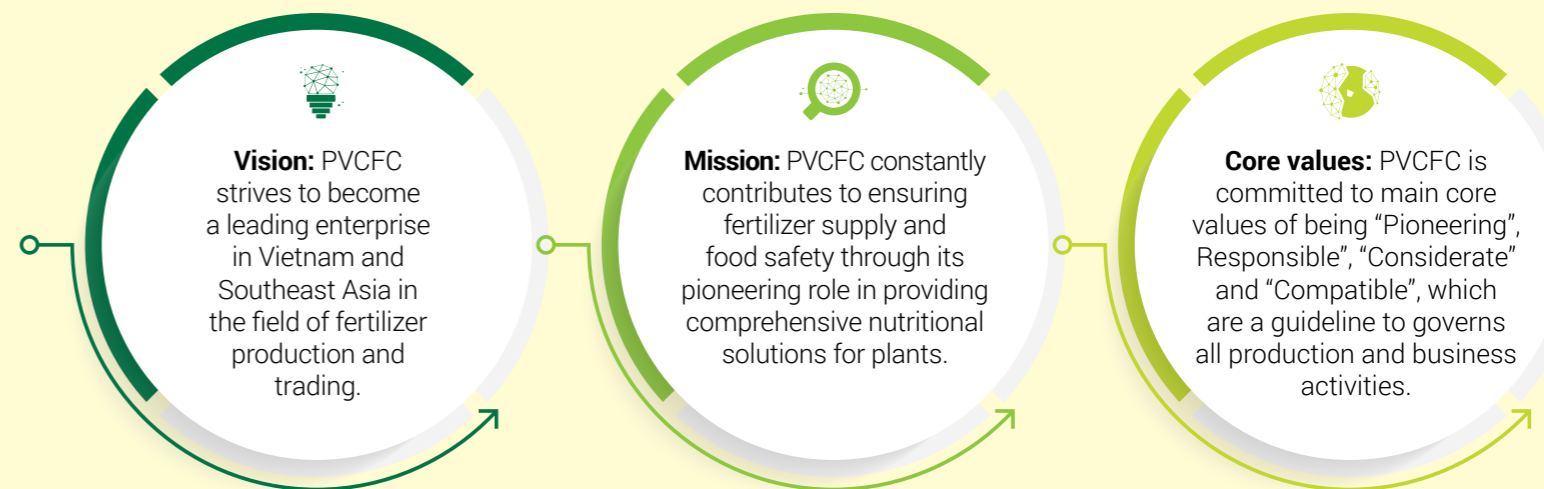
Continuing to implement and strictly comply with regulations on Covid-19 prevention of the Government, the Ministry of Health, central and local agencies and the Group. Regularly updating latest news and developments on the pandemic, thereby proactively developing response plan to ensure high efficiency of pandemic prevention.



### DEVELOPMENT ORIENTATION IN THE NEXT 5 - 10 YEARS

In medium and long terms in the next 5-10 years, PVCFC will focus on large and strategic goals and overall orientation for the unit's activities in new situation, to be specific:

#### Vision, mission and core values



#### Target market

PVCFC's strategic target market of in the coming time will focus on Mekong Delta, Southeast and Central Highlands, and Cambodia. In addition, PVCFC actively expands domestic markets i.e., Central and Northern regions as well as Southeast Asia, South Asia and Latin America markets.

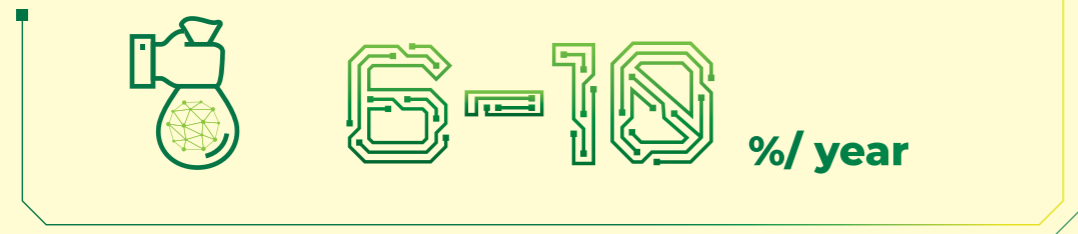


## DEVELOPMENT ORIENTATION (continued)

### DEVELOPMENT ORIENTATION IN THE NEXT 5 - 10 YEARS (continued)

#### Growth target

#### BUSINESS VOLUME GROWTH FROM



Striving to increase fertilizer business volumes from 6% -10% per year, depending on specific product structure and proportion of each product to ensure completing revenue and profit targets.

For revenue, improving revenue growth rate from 5% -10% per year and, by 2025, becoming one of the five leading enterprises in Vietnam in terms of revenue.

#### Market share

Maintaining domestic fertilizer market share of at least 10%/year nationwide

For Urea, maintaining domestic market share from 30% - 35%/year

For NPK, striving to meet 5% - 10% of domestic market share and focusing on occupying at least 20% per market regarding domestic target markets.

For other fertilizer products: Striving to meet 5% - 15% of domestic market share, depending on specific product segment.

#### Product structure

Continuing to maintain production, sales and distribution of core products i.e., Urea in domestic market. Depending on each period, to reduce risk of Urea oversupply, PVCFC proactively deploys an appropriate export channel and ensures a reasonable balance of domestic supply and demand.

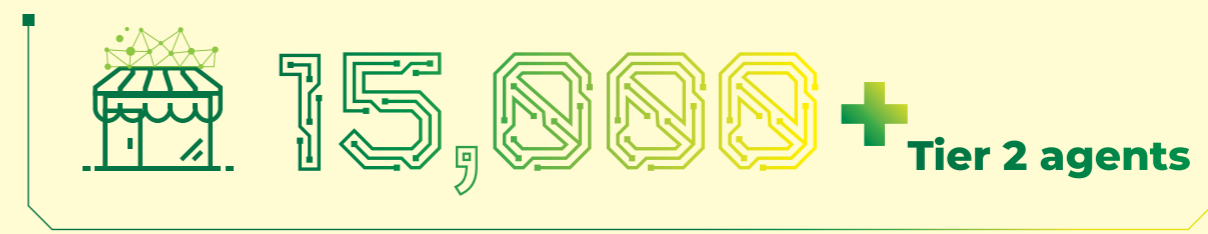
For NPK, PVCFC strives to increase consumption volume in domestic market, especially target markets in Mekong Delta, Southeast and Central Highlands as well as strategic market in Cambodia.

Besides inorganic products, PVCFC gradually expands its portfolio and exploits organic fertilizer segment branded OM CAMAU to adapt to business environment changes in new situation.

In addition, to be proactive in trading other fertilizer products, PVCFC researches import and export segments to import DAP, Potassium, NPK and SA fertilizer to serve the demand for raw materials of NPK Plant and other domestic distributors.

#### For distribution channel development

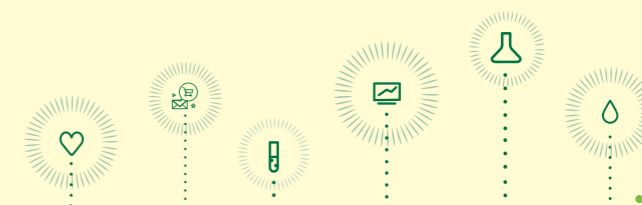
#### HAVING



Continuing to consolidate, develop and expand distribution system at all levels. Orienting in the period 2021 - 2025, the growth of Tier 1 distribution system will be 2 times higher than the current one and the annual growth of Tier 2 distribution system will reach 5%/year and having at least 15,000 Tier 2 agents.

Distribution system development is absolutely necessary to promote the consumption of NPK products and other products as PVCFC enters a new stage of development with new challenging goals.

For target market, the top priority is still developing and consolidating distribution system of all levels in Mekong Delta, Southeast and Central Highlands, and Cambodia in parallel with developing distribution model with effectively applying IT to sales and distribution management to master the market and successfully compete against competitors.





## DEVELOPMENT ORIENTATION (continued)

### DEVELOPMENT ORIENTATION IN THE NEXT 5 - 10 YEARS (continued)

#### Research and development (R&D)

Strengthen research and development (R&D) by giving more resources from materials to human resource development, investing advanced equipment and laboratory to best serve R&D. R&D prioritizes to develop new fertilizers with higher values than the current ones, having more competitive prices, meeting the demand of farmers and distribution system, ensuring economic efficiency and business scale of each market.

For solutions, besides internal resources, PVCFC prioritizes searching and selecting and takes the lead in coordinating with Institutes, Schools, and Centers both at home and abroad via the team of well-known experts and scientists to manufacture high-gray-matter nutritional products/solutions, meeting requirements of market and customers in the future.

#### Merger and Acquisition (M&A)

Based on internal resources, PVCFC researched and piloted M&A of some highly feasible projects to diversify supply chain, prioritizing domestic market. M&A aims to not only meet financial and business goals, but also ensure competitive orientation, expand brand development, control distribution and above all ensure long-term competitiveness of PVCFC on the market in the next 10-20 years.



PVCFC's team of experts were researching and completing products

### ORIENTATION SOLUTIONS

#### Solutions on production and R&D

- 1

Maintaining and operating Ca Mau Fertilizer Plant Complex (i.e., Urea and NPK) in a stable, safe and effective manner; maintaining capacity of Urea Plant as the result achieved during the last time (from 108% to 112% per year) to optimize the Company's scale.
- 2

Closely following business plan and product consumption for effective production on the basis of ensuring to maximally supply goods for domestic market; maintaining reasonable inventories at plant; arranging and dispatching goods to other areas as well as making a suitable maintenance schedule so as not to affect the Company's activities.
- 3

Strengthening product quality inspection in all steps, applied to all key materials for finished products and at the same time strictly controlling finished products before being supplied to the market to ensure all PVCFC's products are manufactured with the highest quality to not only meet but also exceed the customer's expectation.
- 4

Maintaining cost savings and minimizing production cost by promoting technical initiatives of management team, operation team and all highly skilled workers of Ca Mau Fertilizer Plant; Striving to reduce the actual consumption of key materials such as gas, power, and chemicals to be equal to or lower than the norms and at the same time complying with quality and safety regulations in all production and processing activities; Developing periodic maintenance plan at a reasonable cost and reducing total production maintenance time of the plant to promptly meet the business schedule.
- 5

Making an adequate investment in R&D to timely supplement resources in equipment, facilities, laboratories, and processing plants; Building a good compensation scheme to attract high-quality human resources; Coordinating with leading Centers/Institutes/Schools/Scientists in agriculture and fertilizers to manufacture high-value products to meet the increasingly diverse requirements of markets and customers.



## DEVELOPMENT ORIENTATION (continued)

### ORIENTATION SOLUTIONS (continued)

#### Solutions on business and brand development



Concentrating the most resources to maintain and develop target markets with strengths in agricultural development in Mekong Delta, Southeast and Central Highlands provinces. These are the rich and large market with potential advantages in exporting key agricultural products in Vietnam, thereby absorbing a large amount of fertilizers. Researching and connecting to build a "High-tech agriculture" production model applied to specific crops in the provinces and cities of Mekong Delta, Southeast and Central Highlands in the following years.



Developing a distribution system both vertically and deeply to increase the number of agents, increasing multiple points of sale (POS) in each province and region to ensure product coverage in major markets as well as improving quality of distribution system in the direction of increasing consumption at each POS, bringing efficiency to distribution chain of all levels.



Investing in expanding supply chains, developing logistics system to satisfy business orientations and strategies in regions and ensuring multiple goals such as storage for distribution system; timely serving crops of the farmers; stockpiling raw materials; balancing logistics costs and commodity price trends to improve business performance and self-trading goods as the fluctuations in raw material prices and potential risks of global supply chain interruption as happened in the past.



Continuing to exploit international market segment based on the advantages in understanding Asian market, especially Southeast Asia, South Asia, and Latin America, thereby improving export proportion of suitable products in the context that fertilizer industry suffers from effect of seasonality to reduce inventory pressure at Plant/General warehouse as well as to implement a reasonable sales strategy in each period.



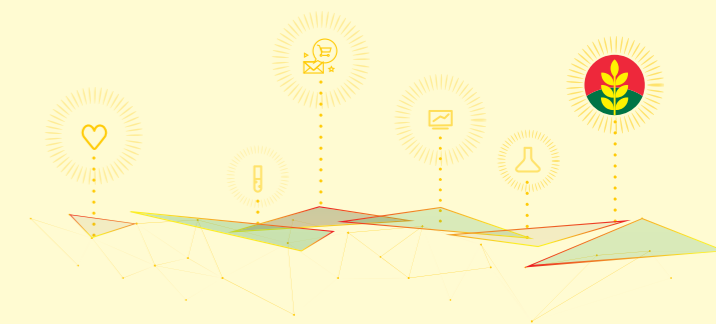
Maintaining a flexible and attractive sales policy with agents, distributors, domestic and foreign partners, and brokers to ensure harmonious interests between manufacturers - distribution channels towards strategic goal of maintaining a competitive advantage, dominating domestic market and beating foreign competitors.



Fostering marketing strategies for key products of Urea and advanced products, developing marketing strategies for new products, especially key products such as NPK, organic, and Urea-based products in domestic market in the direction of environmental friendliness, developing Vietnam's agriculture sustainably and effectively; Completing overall marketing strategy for "Ca Mau Fertilizer" brand including portfolio of Ca Mau Urea, Ca Mau NPK, organic fertilizer, and microbiological fertilizer.



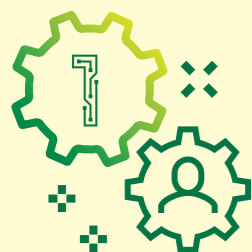
Strengthening market research and forecast by regularly monitoring and updating the world and domestic fertilizer prices; domestic demand and supply; seasons, crops, weather, diseases, and prices of agricultural products; competitive pressure from domestic and abroad, thereby improving predictability of fertilizer prices; assessing and analyzing the factors affecting production and business to develop effective response scenarios and plans in the context of macro environment that may have a lot of fluctuations in the coming time.



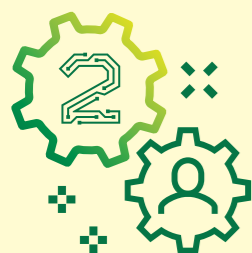
## DEVELOPMENT ORIENTATION (continued)

### ORIENTATION SOLUTIONS (continued)

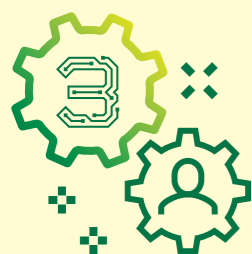
#### Solutions on management and human resources



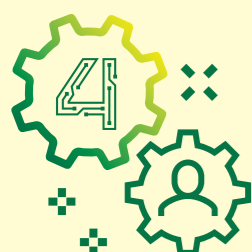
Enhancing inspection and supervision of the Company's production and business according to the approved annual plans to ensure compliance with the business plan roadmap already made and completing the set goals; Consolidating and perfecting Committees, decentralizing Committees under BOD and empowering members to actively execute their tasks in the best manner.



Continuously improving the capabilities of developing and implementing corporate governance on the basis of compliance with the Company's Charter and legal regulations; the Group's regulations; regulations on corporate governance and regulations on professional ethics of members of BOD; Practicing the world's and Vietnam's advanced "Corporate governance practices" to help improve governance efficiency, contributing to good implementation of the Company's strategy and business plan.



Implement "company restructuring project" in accordance with the policy of the Government and the instruction of the Group in alignment with reducing the State's ownership rate while maintaining and improving the value of the State's contribution in PVCFC; Enhancing the role of State representatives in the Company; Restructuring and streamlining the organization, aiming to improve production and business efficiency.



Continuing to consolidate organizational structure under PVCFC by allocating human resources to make it suitable to the employment feature and contents; Creating an attractive working environment so that the employees can rest assured to contribute and devote to the Company; Building a satisfactory compensation scheme for employees, meeting the goal of attracting and developing new personnel, especially highly skilled and highly specialized personnel for the Company; Focusing on fostering and training human resources to improve professional qualifications, knowledge and skills through E-learning towards a long-term and continuous learning process and developing self-learning ability of employees and so on.

#### Solutions on financial and investment



Implementing the State policy and the direction of PetroVietnam, PVCFC continues to divest and reduce the percentage of ownership and capital contribution of PetroVietnam in PVCFC according to the proposed schedule on the basis of strictly complying with State regulations; Considering to issuing ESOP shares for the purpose of recognizing employee contributions and meeting the goal of human resource maintenance and development, especially the employees with high qualification and skills or those with great contributions to the Company.



With the increasingly improving position and strength of PVCFC, especially the financial capacity which has continuously increased in the past 10 years, at present, many major domestic and foreign partners are coordinating and proposing to participate in potential investment projects deployed by the Company. Therefore, based on actual conditions and strategic goals of the Company, PVCFC will consider, research and propose pilot implementation of a number of projects such as M&A, joint venture, association; making investment with 100% contributed capital into some fields related to the Company's core business activities such as hi-tech agriculture, fertilizer and chemical production and business to further complete the Company's value chain in the new period.



Based on advanced corporate governance practices, PVCFC aims to develop and prepare financial statements in accordance with International Financial Reporting Standards (IFRS). It will take a certain time for transformation when IFRS are relatively new in Vietnam and the application of these standards of Vietnam's enterprises is still quite little. At present, PVCFC is working with reputable strategic consulting partners to build project implementation roadmap in each specific phase.



PVCFC's leadership and engineers at the launching ceremony of Ca Mau NPK products

