

# Fertilizers in Vietnam

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## INTRODUCTION

Although agriculture only contributes 20 percent to GDP in Vietnam, over 70 percent of the population relies on the sector. Rice is the most important crop in Vietnam accounting for 90 percent of total grain output. The agricultural sector has faced recent challenges due to urbanization and industrialization, as well as few opportunities for increasing cultivated land area. Increased crop yields through the use of chemical fertilizer is one of the few methods available for increasing agricultural output.

The purpose of this policy brief is to analyze changes in the policy environment and its impact on fertilizer use and supply during Vietnam's partial transition from a centrally planned to market-oriented system. More specifically, this brief seeks to understand the roles the State and private sector have played in sustaining growth in fertilizer use and supply to ensure food security and rice exports.

## POLICY REGIMES

Fertilizer was first introduced in Vietnam in the 1960s with the creation of three fertilizer factories that had a combined capacity of 130,000 MT/year, but output was only 38 percent of total capacity. As a result, most fertilizer demand was met by imports, which were untaxed. The economic reforms of the 1980s led to the restructuring of the fertilizer sector, but the fertilizer supply remained under government control. From 1991 to 2000 the fertilizer sector was partially liberalized with laws encouraging domestic investment, but the government continued to control fertilizer pricing and supply and held majority shares of liberalized SOEs. This allowed the government to keep the price of fertilizer low to support farmers, but discouraged private sector investment in the sector. Production capacity did not improve and 80-90 percent of urea continued to be imported from China.

**Table 1 – Summary of policy regimes**

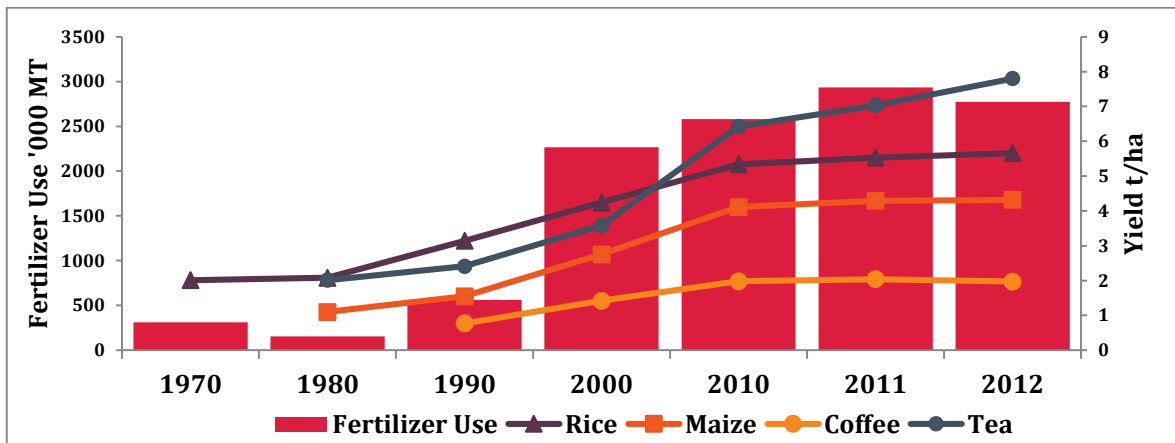
Period	Regime
1960-1989	Centrally planned systems with a public sector monopoly in production, importation, and distribution of fertilizers; fertilizer are heavily subsidized.
1990-2000	Fertilizer prices remained under government control; import quotas were given to 50 specific companies with regional allocation by the government, leading to fragmentation by administrative borders. Partial liberalization of the fertilizer sector
2001-2012	Market liberalization allows private sector and joint ventures to coexist with SOEs in production, import and marketing of fertilizer; no import quotas but restrictions on exports; strong support to the industry through subsidized inputs especially natural gas and phosphate rock.

Since 2001 Vietnam's fertilizer production has grown tremendously and is more linked to international markets as a result of the relaxed control of fertilizers prices. In 2010, the government established a scheme to industrialize and modernize the fertilizer industry by promoting the establishment and upgrade of fertilizer factories. The government also plans to construct 22 regional distribution centers, each with a capacity over 30-35,000 MT. Although there has been some liberalization, most fertilizer is produced by a small number of SOEs and all urea and NPK fertilizers are subject to a government monitoring and stabilization program.

## FERTILIZER USE

Since the economic reforms of 1986 (under the Doi Moi movement), the cropping model of Vietnam has changed from extensive cultivation to intensive cultivation, which has led to dramatic increases in crop yield.

**Figure 1—Fertilizer use compared with yields over time**

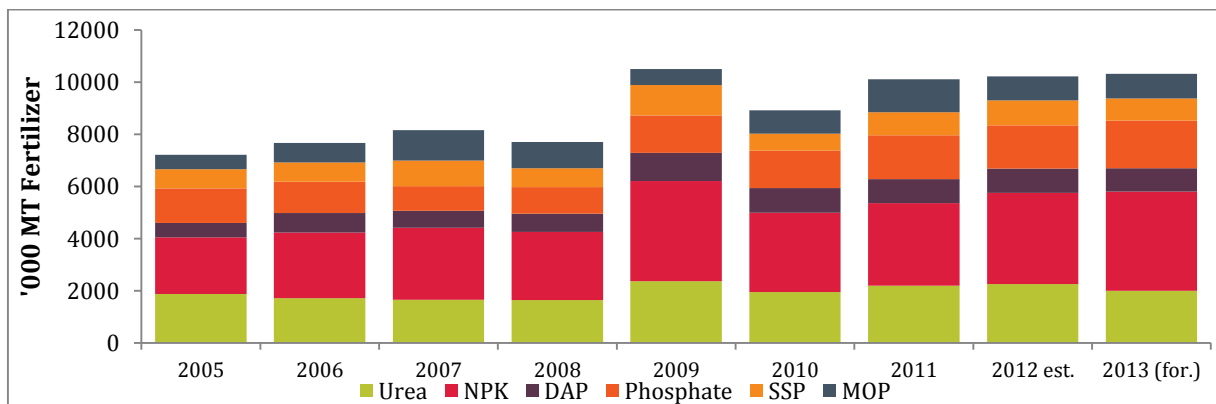


Source: Summary from Nguyen Van Bo, 2013

Nitrogen is often the limiting factor in the soil; therefore nitrogen fertilizer is the most used in Vietnam. Phosphate is the second most important, followed by potash. According to the Ministry of Agriculture and Rural Development (MARD) in 2011, farmers used an average of 190 kg/ha of NPK fertilizer and 9.6 million MT of fertilizer products a year. It is forecast that by 2013 total fertilizer consumption will reach 10.32 million MT per year.

There are differences by farm size with small farmers generally using more fertilizer than medium or large farmers. Fertilizer use also differs by region. Rice is mostly grown in the Red River and Mekong River Delta regions, while coffee is grown in the Central Highlands, and perennial crops such as cashew, pepper, rubber, and fruit are grown in the southeast region. More fertilizer tends to be used in the north than in the south because different crops are cultivated in the two regions and because farm sizes tend to be smaller in the north, meaning that farming is more intensive. Additionally, the land in the south naturally has more nutrients and is better suited for rice cultivation.

**Figure 2—Fertilizer demand by product**



Sources: MARD report, 2012

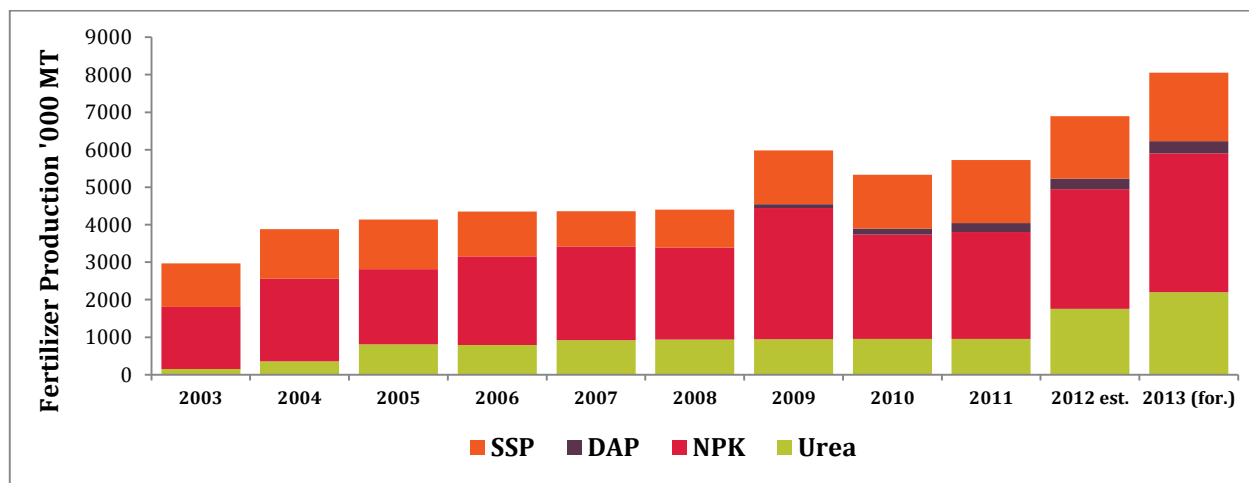
## FERTILIZER SUPPLY

The fertilizer sector is jointly managed by MARD and the Ministry of Industry and Trade (MOIT). MARD focuses on forecasting domestic market demand, issuing and updating an annual list of acceptable fertilizers, granting licenses for imports, and, in cooperation with MOIT, preparing fertilizer production amounts and their distribution. MOIT operates VINACHEM and focuses on governing chemical fertilizer production. State owned enterprises (SOEs) dominate fertilizer production. Currently, the only companies producing urea are state owned (VINACHEM and Petrol Vietnam) which both receive preferential prices for natural gas. The production of the two major

phosphate fertilizer products, single super phosphate (SSP) and fused magnesium phosphate (FMP), are produced by VINACHEM, VAFCO, LAFCHEMICO, NIFERCO, and SFC; the first four of which are more than 50 percent owned by the government. Recent increased demand for NPK fertilizer has created room for small private fertilizer blenders but some large SOEs such as VINACHEM also participate in this market producing approximately 45 percent. Fivestars International Group, Japan Vietnam Fertilizer Company, and Baconco Fertilizer Factory are all private business which have developed with the aid of FDI and now occupy nearly 30 percent of the private-fertilizer market while other smaller companies make up the remaining share.

There are an estimated 35,000-40,000 fertilizer distribution units currently operating throughout Vietnam. Some of the large companies have their own distribution networks but by and large, most distributors operate independently from producers and do not receive a commission for distributing fertilizers.

**Figure 3—Fertilizer production in Vietnam**

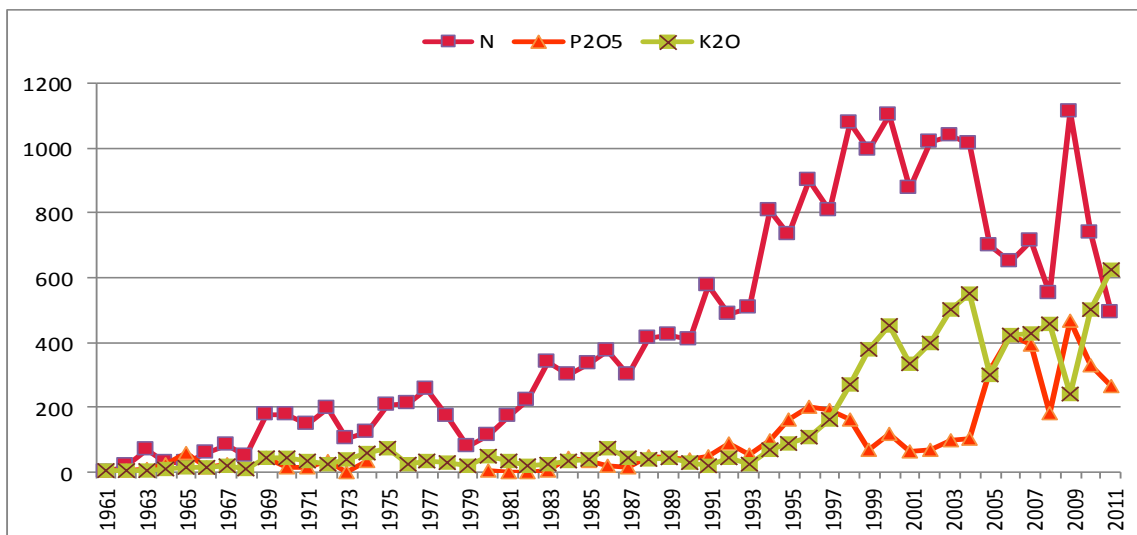


Source: GSO and Ministry of Agriculture and Rural Development, 2012

Fertilizer production increased from less than 3 million product tons in 2003 to 8 million product tons in 2013 and exceeds domestic demand for urea and SSP. This has coincided with a decrease in the demand for urea imports. The country remains a net importer of fertilizer most of which comes from China, which provides 40-50 percent of total imports. More than 90 percent of this fertilizer passes through border crossing at Ban Vuoc. The country still imports 65 percent of DAP, 100 percent of SA, and 100 percent of Potash. Fertilizers from neighboring countries such as Thailand, Malaysia, and Indonesia have been increasing in recent years.

Prior to 2001, the government controlled imports through a quota system and fertilizer companies were allocated distribution regions, leading to inefficiency and fragmentation of the market by administrative borders. Therefore, in 2001, the import system changed and quotas were replaced import licenses which has led to increased imports. There are approximately 400 companies that import fertilizer, but 15 large companies control 55-60 percent of the market.

**Figure 4—Import of fertilizer nutrients in Vietnam ('000 MT)**



Source: <http://www.fertilizer.org/ifa/ifadata/results>

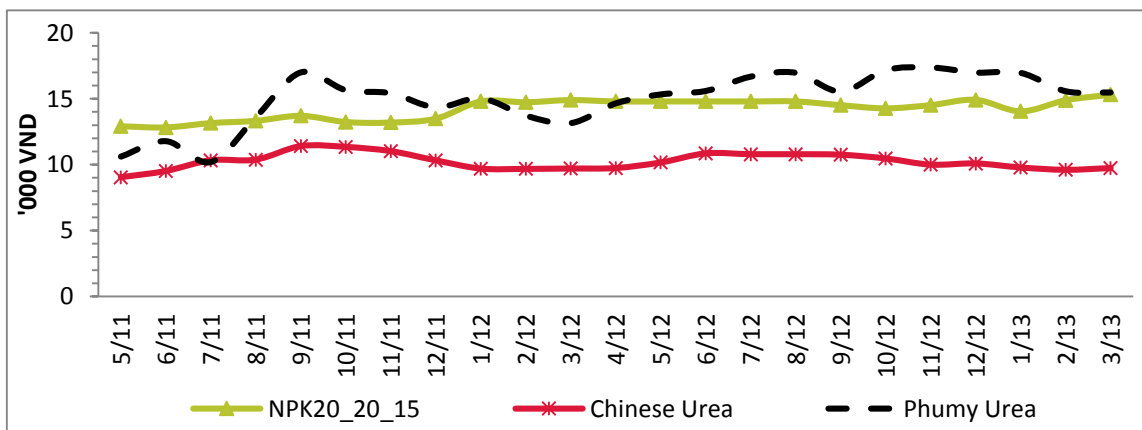
In the future, it is expected that nitrogen fertilizer imports will decrease as surplus urea production increases. Vietnam has a strategy to expand NPK and Urea exports to neighboring countries. Potash fertilizer imports are used largely for NPK combinations. There has been an upward trend in potassium imports as farmers pay greater attention to intensive farming practices.

## PRICING SYSTEM

The government controls prices of urea and NPK through two means: production and output costs. Large companies have to register their production costs and output prices with the Price Management Agency of the Ministry of Finance. Based on an assessment of these costs and the perceived fertilizer demand, the government is able to release or hold fertilizer stocks through SOEs to stabilize prices. In addition, the government provides a subsidy on the raw materials for fertilizer production facilities. The price of coal for fertilizer production is approximately 30 percent lower than prices in other countries. Moreover, the price of natural gas is lower for former SOEs.

Subsidies, as well as better access to credit, land, and lower land prices should imply that the domestic price of fertilizers should be lower than international prices. Yet domestic prices are normally 5-10 percent higher than import price, depending on the specific fertilizer and circumstance (Figure 5). The subsidy on raw materials therefore does not appear to be passed on to farmers and instead producers enjoy the benefits, although some producers and farmers claim that domestic urea is much better in quality than imported urea. For DAP, which is mostly imported, domestic prices reflect global price trends with the difference between domestic prices and global prices due to domestic marketing costs.

**Figure 5—Nominal price of fertilizers in Vietnam**



Source: Author's calculations based on data from MOIT, General Department of Vietnam Customs, and World Bank

## QUALITY CONTROL

The Market Inspection Agency under the Ministry of Industry and Trade and the Inspection Agency of MARD are responsible for monitoring fertilizer quality. The inspection agency of MOIT is well organized and operates at all levels of government from the central to the commune level. However, this agency is responsible for monitoring the quality and trade of numerous products, not fertilizer alone. On the other hand, MARD is more specialized in agro-products but suffers from low staff numbers. This has manifested in a proliferation of fake and low quality fertilizers and both small and large companies have been implicated in producing fertilizers with lower than declared nutrient content and/or for mislabeling (Thin, 2012). This issue is particularly prominent in the major rice growing regions of Vietnam where transactions are small and done without receipts making recourse and compensation difficult.

It is expected that by the end of 2013 a new regulation on fertilizer production will be issued by MARD and MOIT that will apply tougher regulations on producers to prevent against fake and low quality fertilizers. MOIT anticipates that 50-60 percent of small companies will close due to their inability to satisfy the new conditions.

## INTERNATIONAL MARKETS

No official data on fertilizer exports exists. Vietnam imports from 65 countries; the largest fertilizer exporters to Vietnam are China, Russia, Canada, Japan, Philippines, and Korea, with China providing 40-50 percent of total imports. More than 90 percent of fertilizer from China pass through the border between China and Vietnam at Ban Vuoc. When demand for fertilizers is high, China often imposes export taxes of up to 175 percent on fertilizer, which negatively affects Vietnam's market. There is also a substantial amount of informal fertilizer trade between China and Vietnam on both land and sea borders. Fertilizers from neighboring countries such as Thailand, Malaysia, and Indonesia have been increasing in recent years.

In the future, Vietnam has a strategy to expand exports to neighboring countries by exporting fertilizer to Cambodia, the Philippines, Indonesia, Thailand, and Malaysia. Vietnam intervenes in the export market with export quotas and by imposing high export taxes on urea, SA, potash, and DAP (approximately 4,000-5,000 VND/kg) to prevent firms from taking advantage of preferential import prices for re-export purposes. Most fertilizer exports that are allowed are NPK blends.

## KEY CHALLENGES AND POLICY OPTIONS

There has been dramatic change in the fertilizer sector in Vietnam. The sector has moved from being heavily dependent on imports through the 1990s to exporting to international markets as a result of government support. Though liberalization of the sector has been slow, this has also led to some development of private sector industries. Still, several policy issues remain.

**Dominance of SOEs:** Although there has been some attempts to privatize former SOEs, the majority of these enterprises still remain under the control of the state. These companies continue to have scale advantages as well as receive preferential treatment by the government. The private sector is therefore limited to distributing fertilizer and operating blending facilities. While the government emphasizes policy change and investment to boost private industry, the maintenance of state controlled fertilizer factories remains a contradiction.

**Poor Subsidy System:** The analysis above has shown that Vietnamese farmers pay above international prices; yet the government provides subsidized fuel prices to producers. While subsidies in most countries are designed to support retailers and farmers, in practice the Vietnamese fertilizer subsidy systems benefits producers through lower production costs.

**Weak Capacity for Quality Control:** Low quality and fake fertilizers remain prevalent throughout the country. There has been an attempt by the government to control the spread of these products, but the issue still remains. The functions and responsibilities of the ministries are not well-defined which have led to overlap and ineffective management. The revisions to the fertilizer law may help.

**Fertilizer Use Efficiency:** There is evidence that farmers are over-using nitrogen fertilizers and not applying sufficient P and K leading to a low agronomic response. Farmer education through extension support on balanced use of nutrients should be encouraged.

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