



Indonesia
Market Watch
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Impact of fertiliser price rise on agricultural productivity and food security in Indonesia

2nd edition

The Australia-Indonesia Partnership for Promoting Rural Incomes through Support for Markets in Agriculture (PRISMA) is a development partnership between the Government of Australia (Department of Foreign Affairs and Trade, DFAT) and the Government of Indonesia (Bappenas).

Summary





- 1 Fertiliser prices have risen sharply since the beginning of the Russia-Ukraine conflict, especially from July to October, and show no sign of leveling out or going down.
- 2 Farmers are feeling the effects of the increased price and are altering their use of fertilisers during the current agricultural season (November – February).
- 3 Farmers commonly over-apply fertilisers in Indonesia and a moderate reduction in use may not lead to a significant reduction in crop or horticultural production in the country.ⁱ
- 4 If commodity prices do not keep pace with fertiliser costs, farmer incomes will be impacted, reducing agricultural budgets for the next season (April – June). Thus, the effects may be felt more severely next season.


Background

After water and seeds, fertiliser is the most important agricultural input for smallholder farmers. PRISMA is working with fertiliser companies to encourage farmers to use good quality fertilisers at the correct dosage to increase productivity.

Fertiliser, its ingredients, and the fuel that goes into manufacturing and transporting it, are internationally traded commodities, and therefore prices are subject to fluctuations. In addition to an already volatile market due to the impact of COVID-19 and severe restrictions on fertiliser exports by China,^{ii,iii} **the conflict between Russia and Ukraine has impacted global fertiliser supply and prices** because:

 Russia is the world's largest exporter of fertiliser (15 percent of total exports, China 13 percent),^{iv} and is subject to sanctions by the EU, USA and others.^v However, Indonesia has not as yet imposed any sanctions upon Russia and remains open to purchasing petrochemicals.^{vi}

 EU production and exports (9 percent of global nitrogen fertiliser exports) have also been hit by sanctions on oil and gas imposed on Russia (which supplied 45 percent of their natural gas), pushing up natural gas prices.^{vii,viii}

 Over 25 countries have imposed fertiliser and/or food export bans or restrictions (Indonesia is not among them).^{ix}

ⁱ For more information on the overuse of fertilisers please refer to the 1st edition of the Indonesian Market Watch on fertiliser prices (April 2022).

ⁱⁱ <https://www.fastmarkets.com/chinas-fertiliser-exports-ban-raises-worries-from-global-markets>

ⁱⁱⁱ <https://www.spglobal.com/commodityinsights/en/market-insights/blogs/agriculture/011922-fertiliser-costs-natural-gas-prices>

^{iv} <https://www.worldstopexports.com/top-fertilisers-exports-by-country/>

^v https://en.wikipedia.org/wiki/International_sanctions_during_the_2022_Russian_invasion_of_Ukraine#:~:text=Following%20Russia's%20invasion%20of%20Ukraine,triggering%20the%202022%20Russian%20financial

^{vi} <https://thediplomat.com/2022/09/indonesia-still-considering-purchases-of-russian-oil-minister-says/>

^{vii} <https://www.fertiliserseurope.com/fertilisers-in-europe/facts-figures/>

^{viii} <https://www.icis.com/explore/resources/news/2022/08/01/10790865/europe-continues-to-sanction-russian-fertilisers-despite-local-production-issues/>

^{ix} <https://www.worldbank.org/en/news/statement/2022/07/15/joint-statement-by-the-heads-of-the-food-and-agriculture-organization-international-monetary-fund-world-bank-group-world>

Indonesian fertiliser price has been impacted by the conflict and other factors because Indonesia is:

10th

The tenth largest importer of fertiliser in the world and is therefore affected by world prices.^{ix}



Particularly exposed to fertiliser imports from Russia and Belarus, with around 23 percent of its imports originating from these two countries.^x



The 7th largest exporter of liquefied natural gas, therefore domestic prices are affected by world prices of this important raw material despite it being subsidised domestically.



A subsidiser of around half of its fertiliser (targeting mainly staple crops), but recently the subsidy budget has been reduced and restricted which in effect will reduce overall supply.^{xi}

Fertiliser is the second largest variable cost after labour on Indonesian smallholder farmers, accounting for 14 percent of variable costs for rice and 18 percent for maize.^{xii}

Fertiliser price trends

Since PRISMA first reported the impact of the Ukraine conflict on fertiliser prices in Indonesia in April 2022, the following trends have been noted:



Fertiliser prices continue to rise: compared to October 2021, urea prices rose by 20.7 percent with 11.9 percent of that rise since August 2022. NPK prices rose 16.5 percent, with 5.6 percent of that rise since August 2022. Urea is cheaper to begin with and for many farmers it is subsidised.^{xiii}



In general, **prices have risen more in the more remote Eastern provinces** compared to Java. For example, Urea prices rose almost 19 percent in Papua compared to 4 percent in Central Java.



Prices rose fastest from July to October but appear to be leveling off.

^{ix} <https://www.statista.com/statistics/1278061/import-value-fertilisers-worldwide-by-country/>

^x United States Department of Agriculture. 2022. Impacts and Repercussions of Price Increases on the Global Fertiliser Market.

^{xi} <https://www.fitchratings.com/research/corporate-finance/pupuk-indonesias-state-linkages-intact-despite-potential-lower-fertiliser-subsidies-19-04-2022#:~:text=The%20fertiliser%20subsidy%20budget%20allocation,an%20underlying%20Finance%20Ministry%20Regulation.>

^{xii} <https://www.bps.go.id/statictable/2019/04/10/2055/nilai-produksi-dan-biaya-produksi-per-musim-tanam-per-hektar-budidaya-tanaman-padi-sawah-padi-ladang-jagung-dan-kedelai-2017.html>

^{xiii} Taken from PRISMA's monthly kiosk price survey and <https://siskaperbapo.jatimprov.go.id/>

Farmer and retailer response to price rises



Most input retailers are able to stock up at the higher prices either because they have sufficient working capital, or good terms of trade with their suppliers. Fertiliser is therefore available to farmers. Anecdotally, some retailers in Papua and West Papua were unable to afford to stock at higher prices, or reduced purchase of crop protection products to be able to afford fertilisers. However, most horticultural products in Papua do not use fertiliser or crop protection products. Rice and maize are not main staple crops in Papua or West Papua.



58 percent of farmers perceived an increase in prices – especially in East Java (70 percent) who are more likely to use it on their rice and maize crops. **60 percent of farmers said fertiliser was less affordable.**



In response to the price increases, **41 percent of farmers intend to reduce the application rate** (especially in NTB, 62 percent), and 24 percent intend to supplement with other fertilisers such as organic compost and subsidised fertiliser.



Farmers are mostly optimistic about productivity and prices for this season. If fertiliser prices remain high next season, most farmers intend to continue to plant the same area and continue to apply fertiliser as before, but a significant minority will switch to cheaper or/and subsidised fertilisers, and blend with organic fertilisers.



If farmer incomes are impacted this season, 68 percent said it would affect their input budget for next season, and 56 percent said their household expenditure would be impacted.

^{xiv} Information in this section is derived from preliminary findings from a PRISMA survey of 60 smallholders in Central Java, East Java and NTB, and an ongoing PRISMA survey of input retailers.

^{xv} <https://en.antaranews.com/news/255289/statistics-indonesia-projects-rice-production-up-229-percent-in-2022>

Outlook for production and food security



The BULOG (state-owned commodities buyer) is predicting an overall 2.3 percent increase in rice production for 2022.



Most farmers substantially over-apply and incorrectly apply fertiliser. Therefore, despite reduced availability of subsidised fertiliser and farmer's intentions to reduce application due to price rises, the reduction of fertiliser application may have little impact on overall food productivity this season (November – February).



If commodity prices are low, or do not rise in line with fertiliser costs in February/March 2023, farmer margins may be adversely impacted reducing input budgets for the next planting season. This may mean a greater impact on productivity for the following season (April – July), especially if fertiliser prices continue to increase.





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