# Indian farms in urgent need of more phosphate and potash-based fertilizers

India has to do something about its fertilizer situation. McKinsey & Co, in their latest report on the sub-continent, say that India has the potential to increase its crop yields by 70% over the next decade, but one of the factors requiring to be addressed is both the inadequate amount of fertilizers but also the imbalance that sees far too little use of fertilizers based on phosphate and potash. India has delayed potash imports as it tried to force down prices of potash in particular but, while those prices have fallen, it seems the market has bottomed. The problem for India is that it still has to deal mainly with the North American and Russia/Belarus in terms of potash and its bargaining strength is somewhat limited.

With phosphate, there is more choice. Recently the Indian External Affairs Minister Salman Khurshid spent three days in Morocco, and was involved in talks to obtain more supplies of phosphate. The state-run OCP Morocco, the world's biggest phosphate exporter, already has trading ventures with Tata Chemicals and Chambal Fertilisers, and 400,000 tonnes a year of phosphoric acid is exported each year to India. In addition, India buys 5 million tonnes a year of rock phosphate, 20% of which comes from Morocco. India is also looking to get more phosphate from Tunisia.

As McKinsey points out, more needs to be done. In its report, *India's Path From Poverty to Empowerment*, the research company notes that India's crop yields are well below Asian averages. India is an agricultural powerhouse; its land-based farming industry produces more than 405 million tonnes a year of food, well up from 1980 when the total was just 192 million tonnes.

Yet the total land under cultivation has not increased significantly over that period.

But now land is being swallowed up for industry, infrastructure and urban growth. “Without the ability to increase the area under cultivation, India will have to focus on productivity to ensure food security and increase farming incomes,” the report says.

At present, and even with all the progress that has been made, Indian yields (with the exception of wheat) are between 10% and 50% lower than Asian averages. Chinese farmers on average get more than three times the yields per hectare than their Indian counterparts, and Vietnamese and Malaysian farmers get about double the tonnages per hectare.

“India’s current average crop yield of 2.3 tonnes a hectare will have to rise to 4.1 tonnes to match the yields elsewhere in Asia,” says McKinsey. About 60% of that improvement can be driven by input factors, including fertiliser and manure use to improve the quality of the soils.

India’s soil has low levels of nitrogen and phosphorous as well as rapidly declining levels of potassium (no doubt the delayed imports of potash will be a contributing factor).

Despite 4.2% compound annual growth in fertilizer use per hectare of cultivated land, Indian farmers use only about one-third the amount of fertilizer than do their Chinese counterparts. “Each year’s crop cycle further depletes the soil, drawing out more nutrients that need to be restored through the use of fertilizer and manure,” says McKinsey. In 2008-09, 8 million tonnes of nitrogen, phosphorous, and potassium were added to India’s soil – but 17.7 million tonnes were removed.

In fact, the drop in potassium was by far the most dramatic. With nitrogen, 5.5 million tonnes went in but 7.7 million were removed, a 29% depletion; for phosphorous, there was a 50%

decline (1.5 million tonnes in, 3 million tonnes out); but with potassium there was a staggering 86% differential, with just 1 million tonnes added – again the failure to import sufficient potash and allow the market to operate without government interference – and 7 million tonnes removed.

McKinsey has another point: apart from applying more fertilizer in total, there needs to be a rebalance. Due to extensive government price controls in favour of urea/nitrogen-based fertilizers, Indian farmers used less phosphorous and potassium fertilizers in 2011-12 than the levels recommended to achieve the correct proportions.