



argusmedia.com

China's efforts to improve sustainability

Oliver Hatfield, VP Business Development

*IFA Strategic Forum
November 2019*

- London
- Houston
- Washington
- New York
- Calgary
- Santiago
- Bogota
- Rio de Janeiro
- Singapore
- Beijing
- Tokyo
- Sydney
- Dubai
- Moscow
- Astana
- Kiev
- Cape Town
- Riga

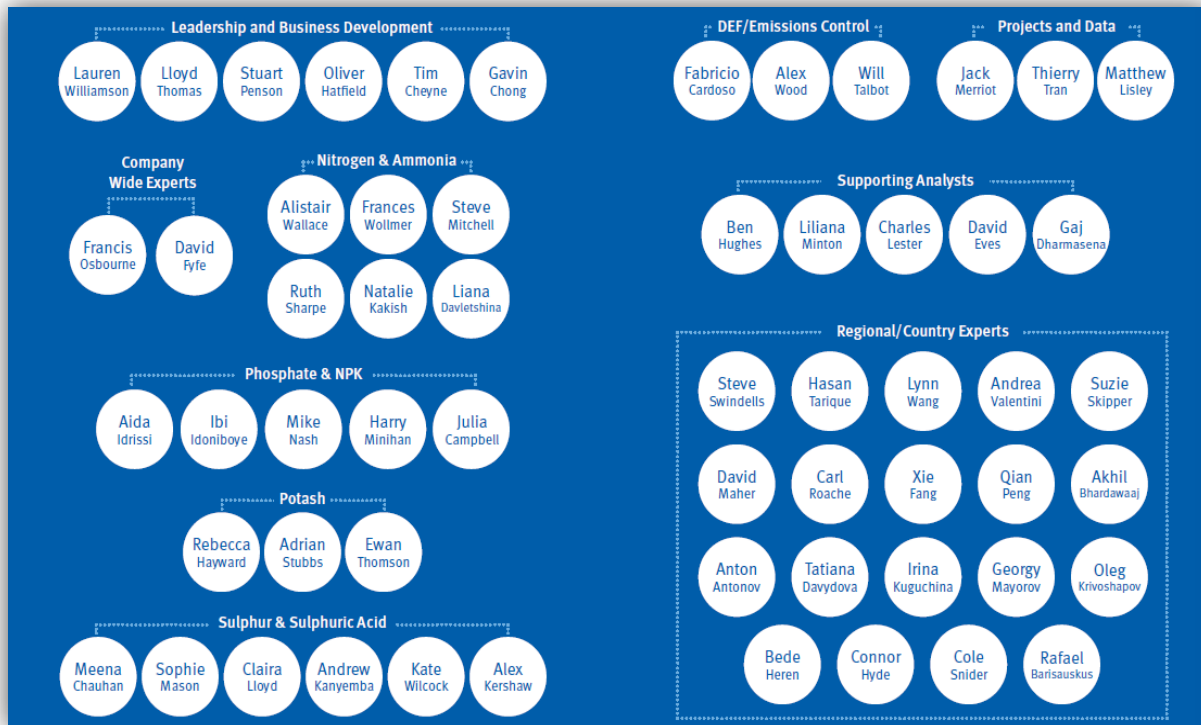
illuminating the markets

Market Reporting
 Consulting
 Events

Argus Consulting

- This presentation provides a general overview only. The material is based on information that Argus considers reliable, but Argus does not represent that it is accurate, complete and/or up to date, and it should not be relied on as such. Opinions expressed are Argus' current opinions as of the date appearing on this material only and only represent the views of the author and not those of Argus, unless otherwise expressly noted.
- All data and other information presented (the "Data") are provided on an "as is" basis. Argus makes no warranties, express or implied, as to the accuracy, adequacy, timeliness, or completeness of the Data or fitness for any particular purpose. Argus shall not be liable for any loss or damage arising from any party's reliance on the Data and disclaims any and all liability related to or arising out of use of the Data to the full extent permissible by law.
- All intellectual property rights in this presentation and the information herein are the exclusive property of Argus and and/or its licensors and may only be used under licence from Argus. Without limiting the foregoing, by reading this presentation you agree that you will not copy or reproduce any part of its contents (including, but not limited to, single prices or any other individual items of data) in any form or for any purpose whatsoever without the prior written consent of Argus.

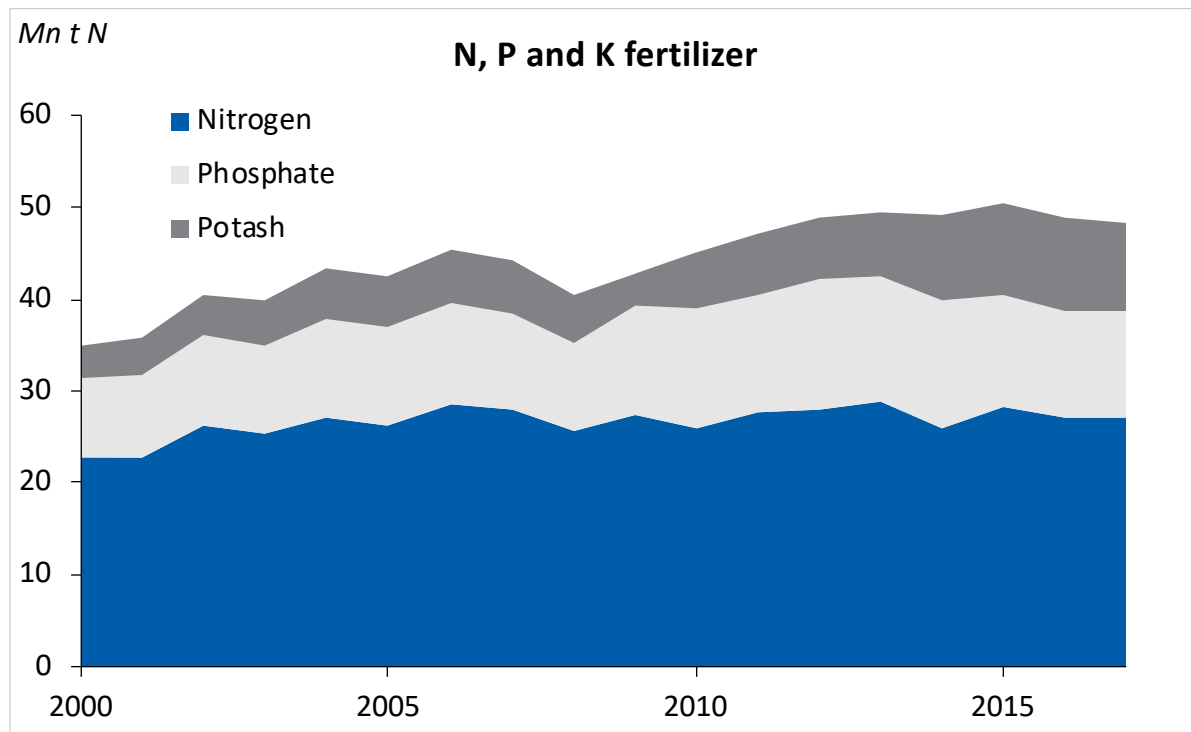
Over 30 experts globally across 7 offices



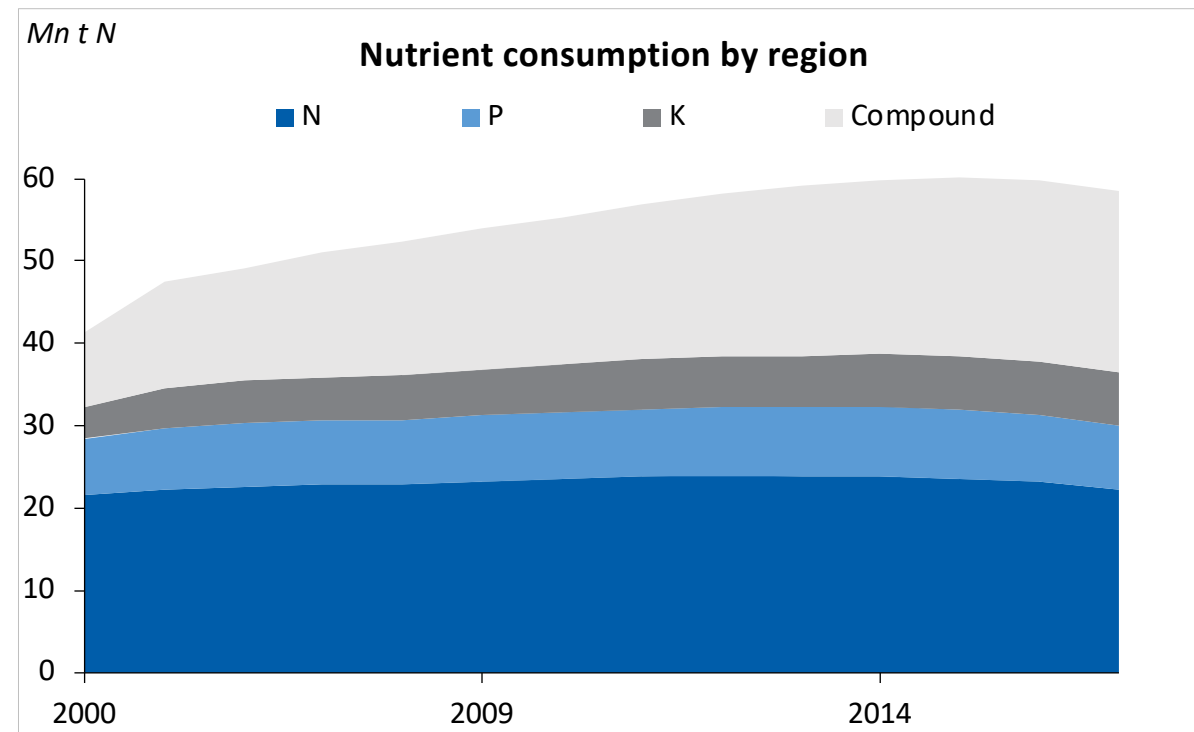
Analytics key content

Key content	New
Price forecast	Published Methodology: -15yr cyclical and reversion forecast updated quarterly -25yr LRMC forecast updated annually
S&D analysis for major markets	Demand Forecasts derived from an Agricultural Model
Assessment of new capacity	Project Screening to filter out future capacity
Cost analysis	Full Cost curve updated quarterly or annually (depending on product)
Frequency of Updates	4 Quarterly updates + 1 Annual spotlight
Data available on Argus Direct	Front End included

All nutrients fertilizer demand over time – source comparison

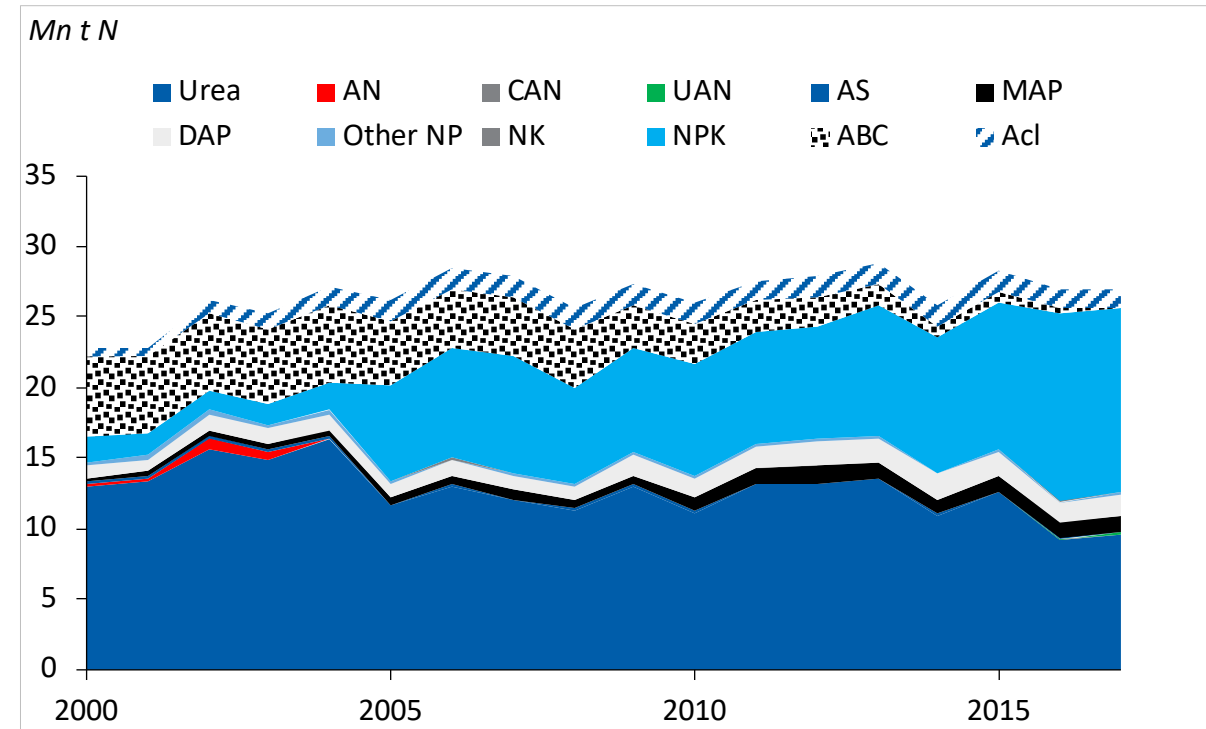
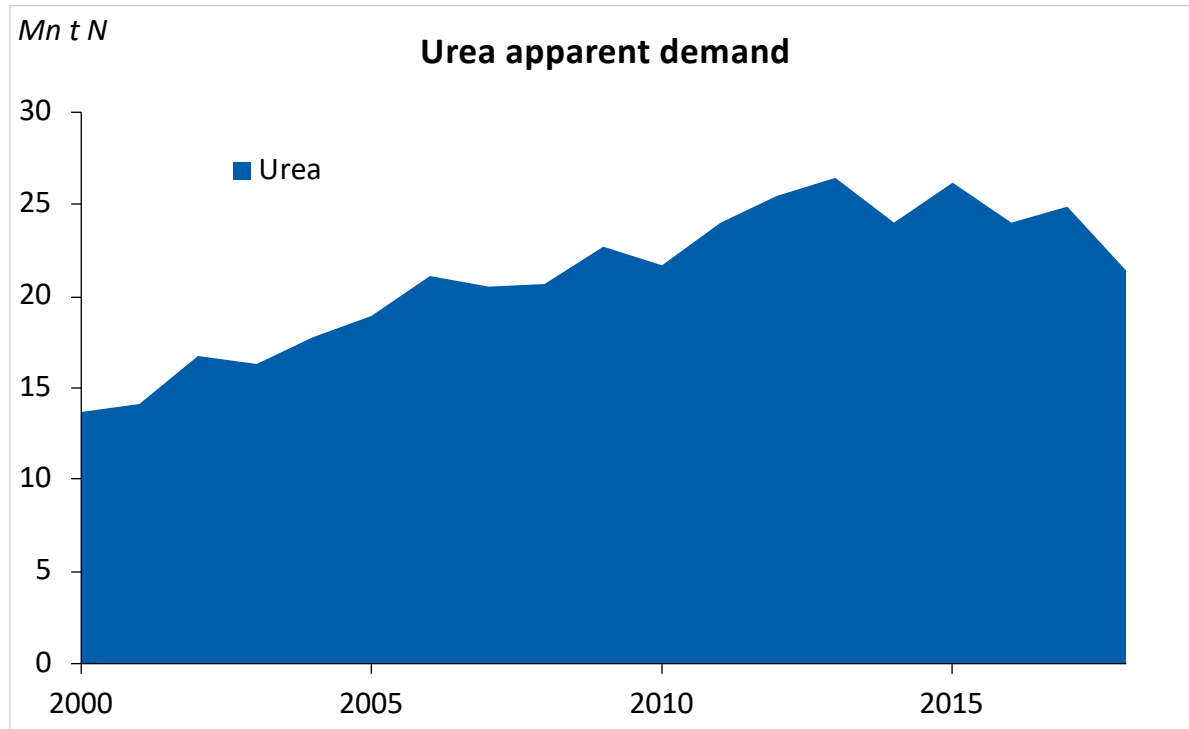


■ IFA

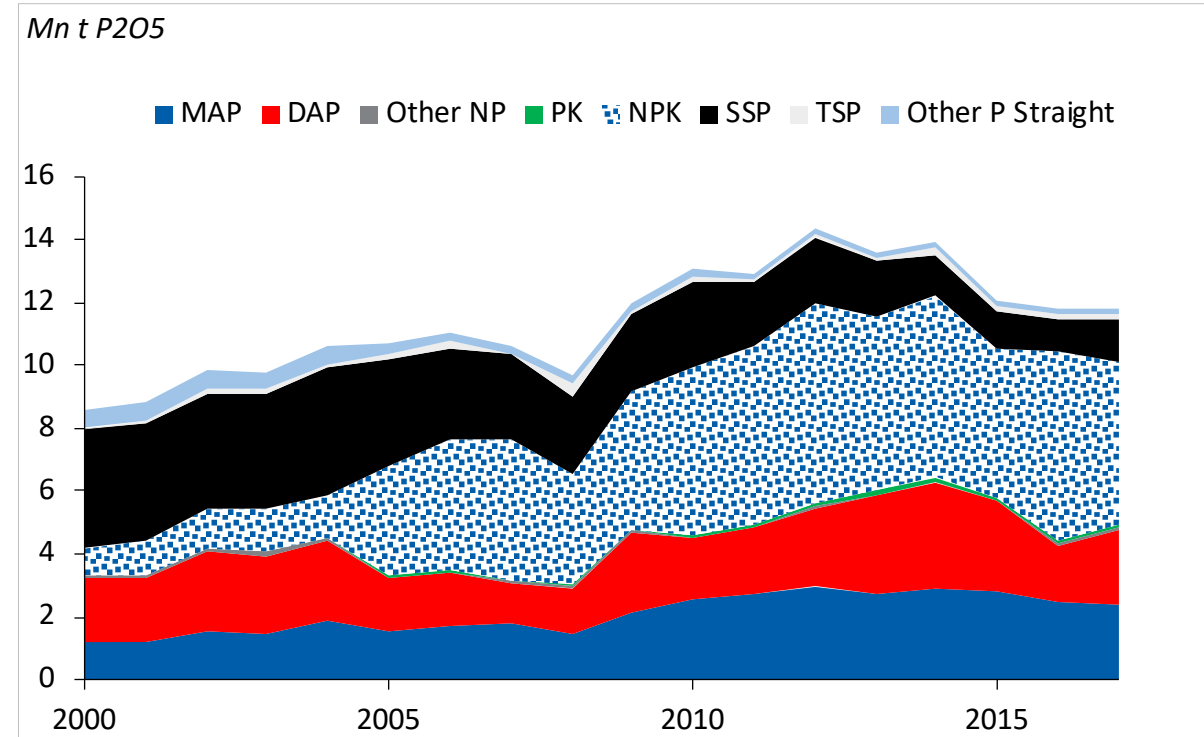
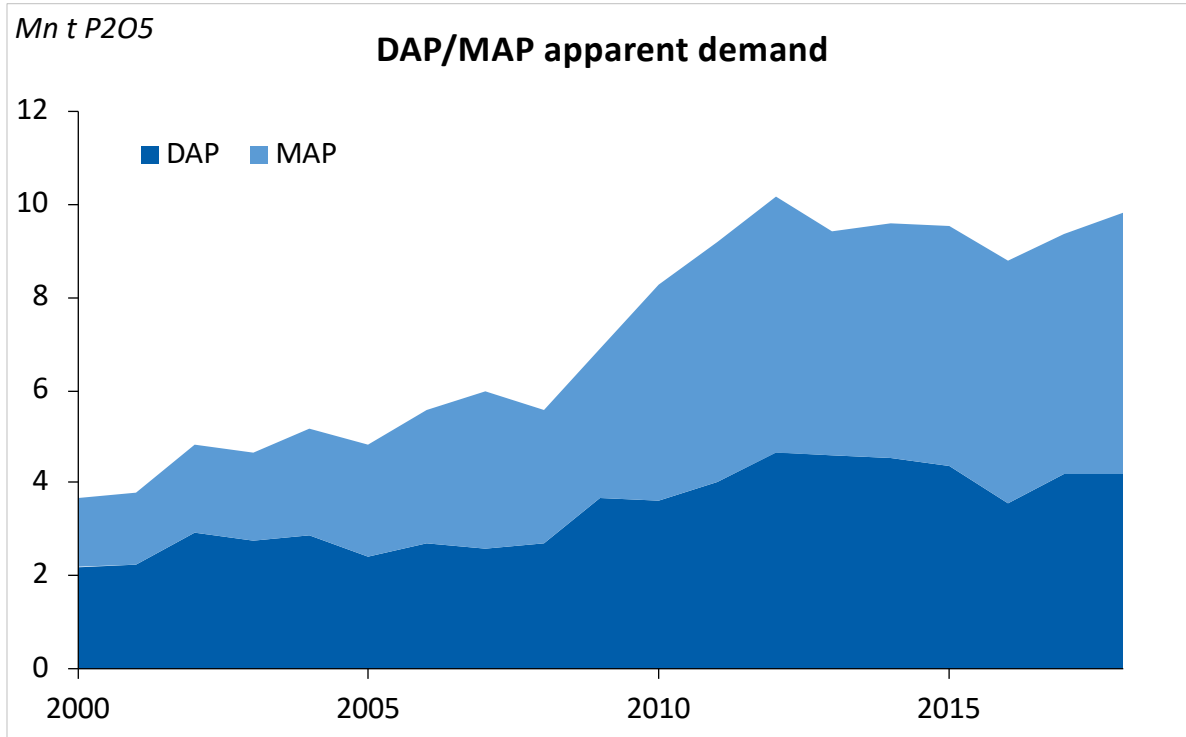


■ National Bureau of Statistics

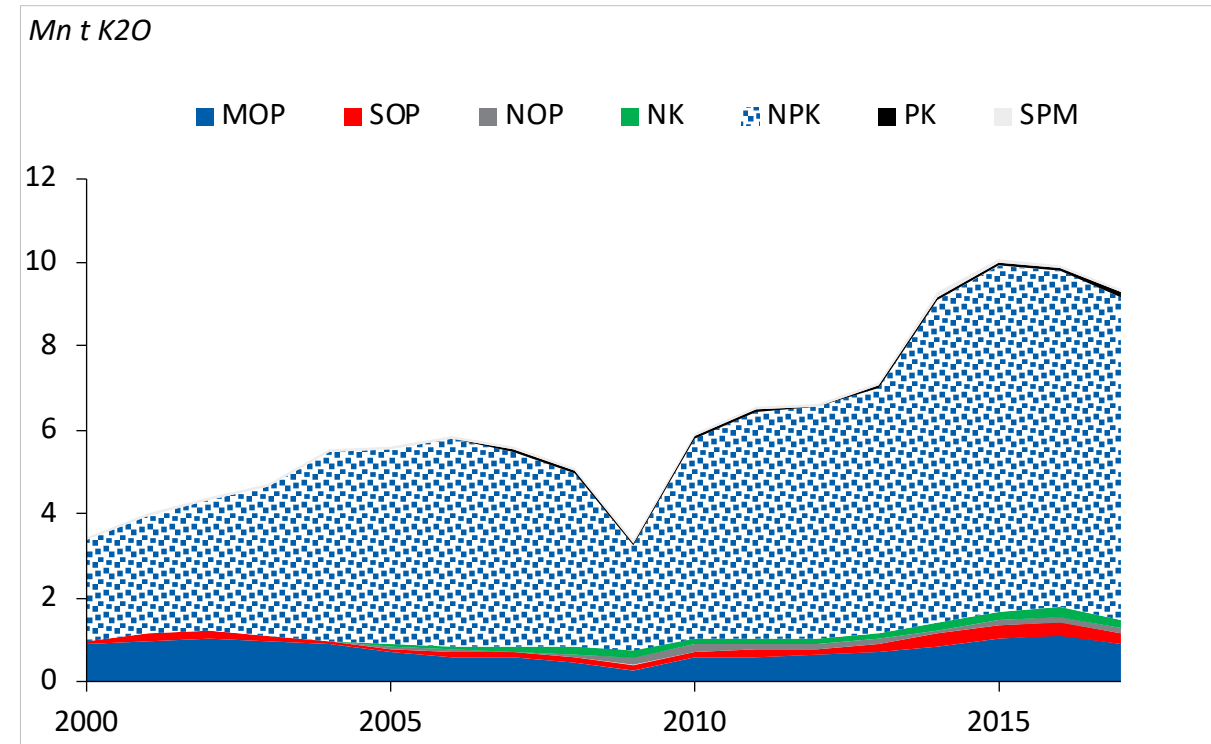
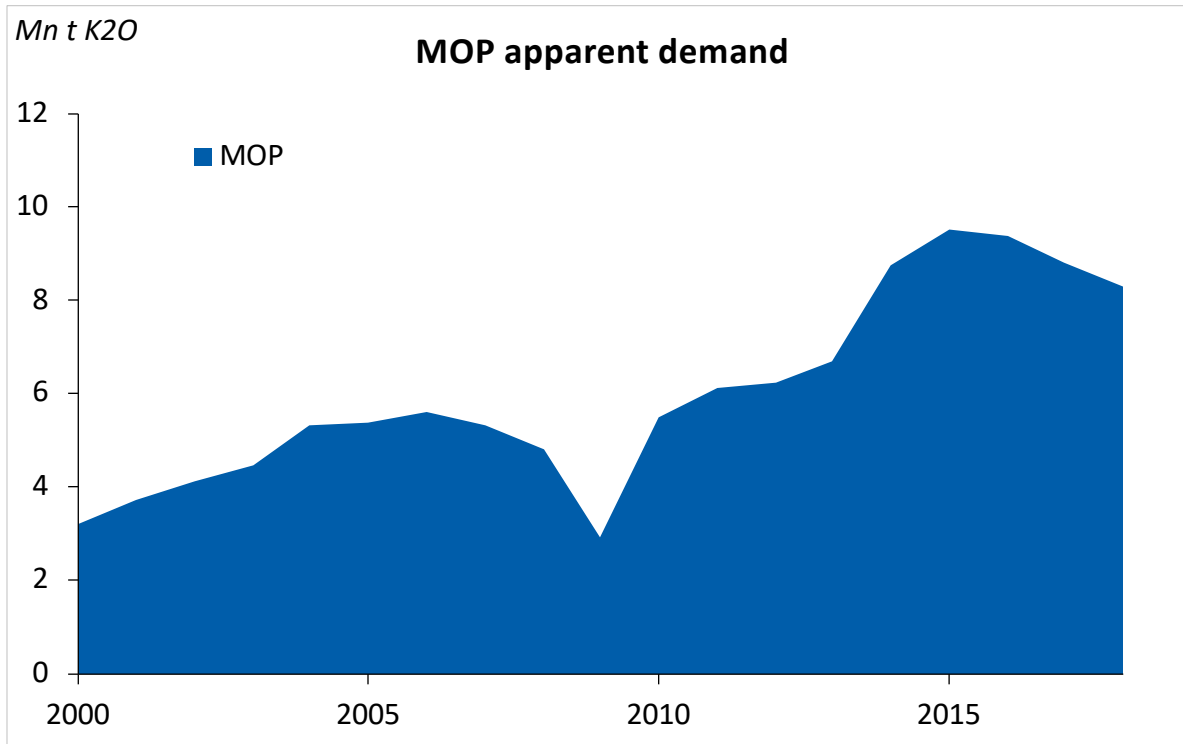
Nitrogen



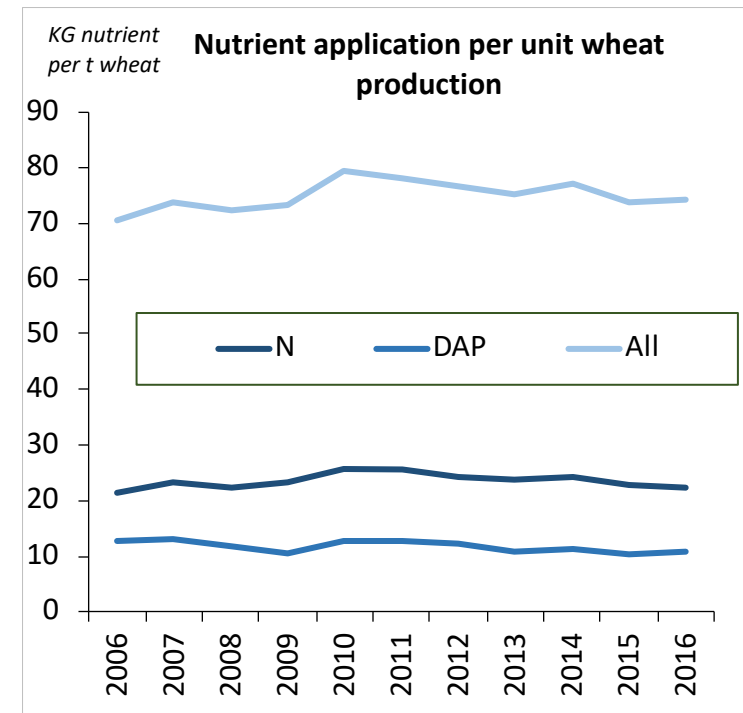
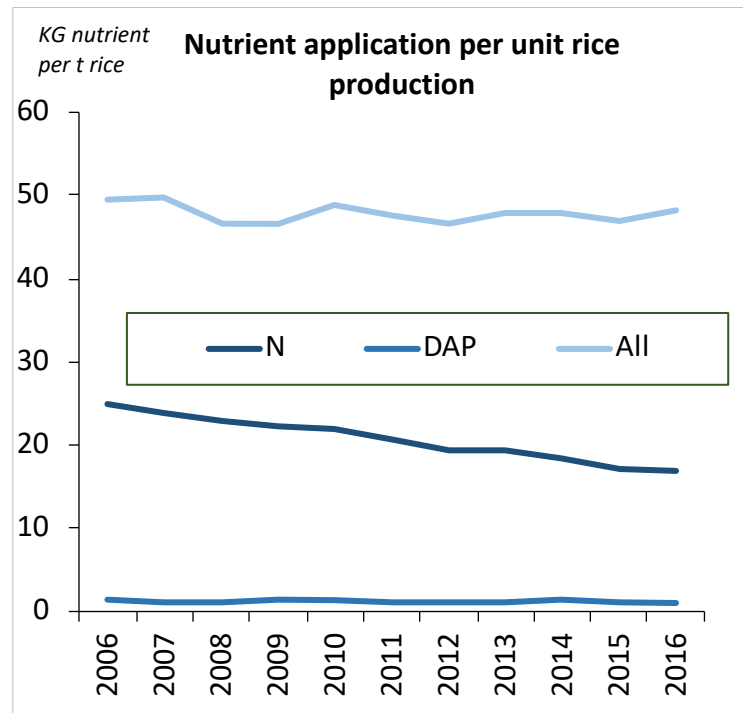
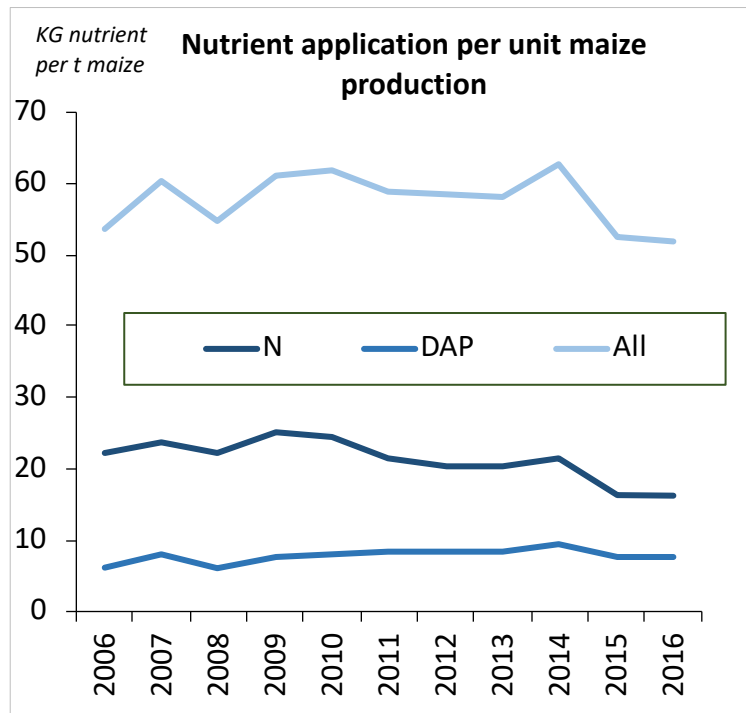
Phosphates



Potash



Adjusting for improving crop yield, we are starting to see an increase in use efficiency



Why? A clear shift in government policy

- China's GDP increased from 4th in 2006 to 2nd in 2014
- However, the environment index (EPI) ranking decreased from 94 to 116/132 in 2012.
- According to China Environment Report 2013, more than 25% of lakes have eutrophication. More than 50% of ground water has been polluted.
- According to the China 1st Soil Pollution Report, more than 16.1% of total soil test samples were polluted exceeding standard requirement.



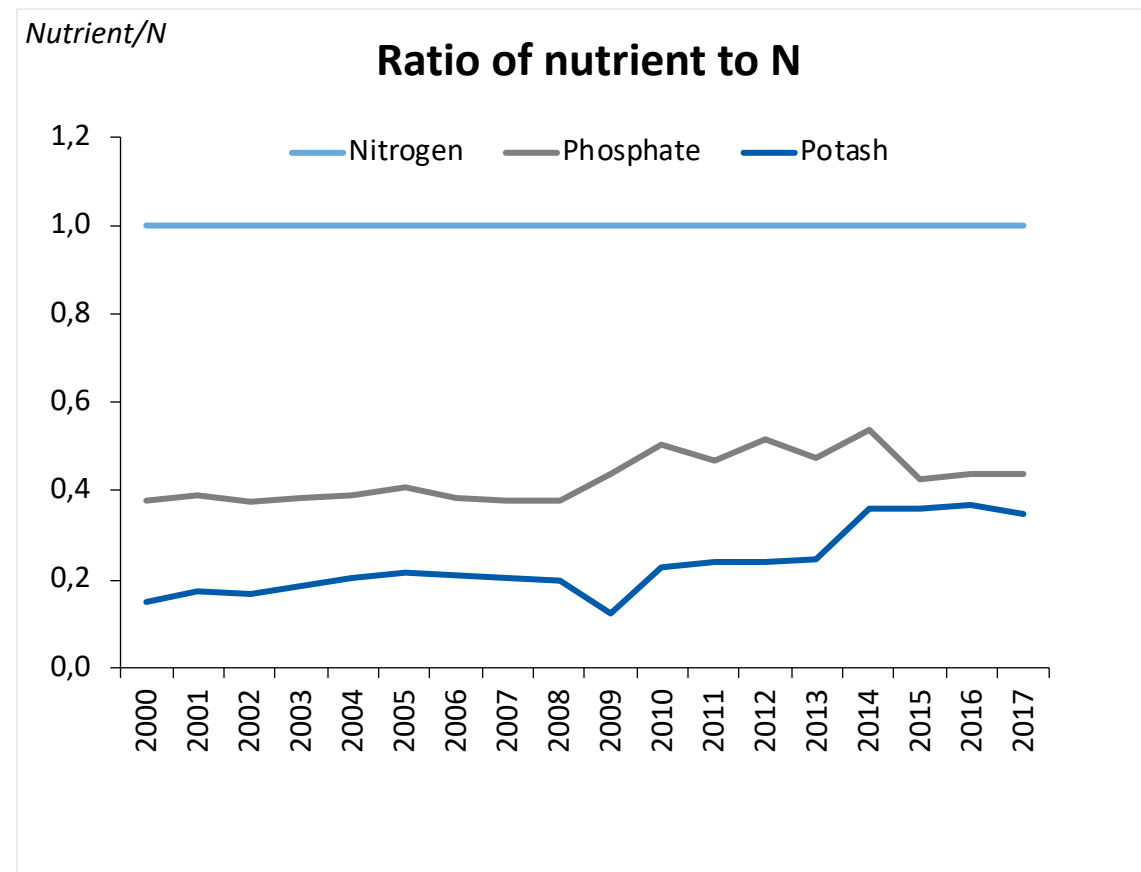
Shift in government policy

- On 17th February of 2015, the Ministry of Agriculture published “**Action Plan for Fertilizer Consumption Zero Growth Rate by 2020**”.
- The result has been a big push from the Chinese government to reduce fertilizer consumption and improve use efficiency through a plethora of measures:

More balanced nutrient use, better performing products, micronutrients

China is much less reliant on nitrogen

- China has more balanced macro nutrient use.
- Low analysis products are being substituted for by high analysis.
- More compounds, nitrate-based and SOP-based NPKs where appropriate (and sometimes not!).
- And this extends to greater use of micronutrients.
- And importantly, soil testing is being used much more extensively.



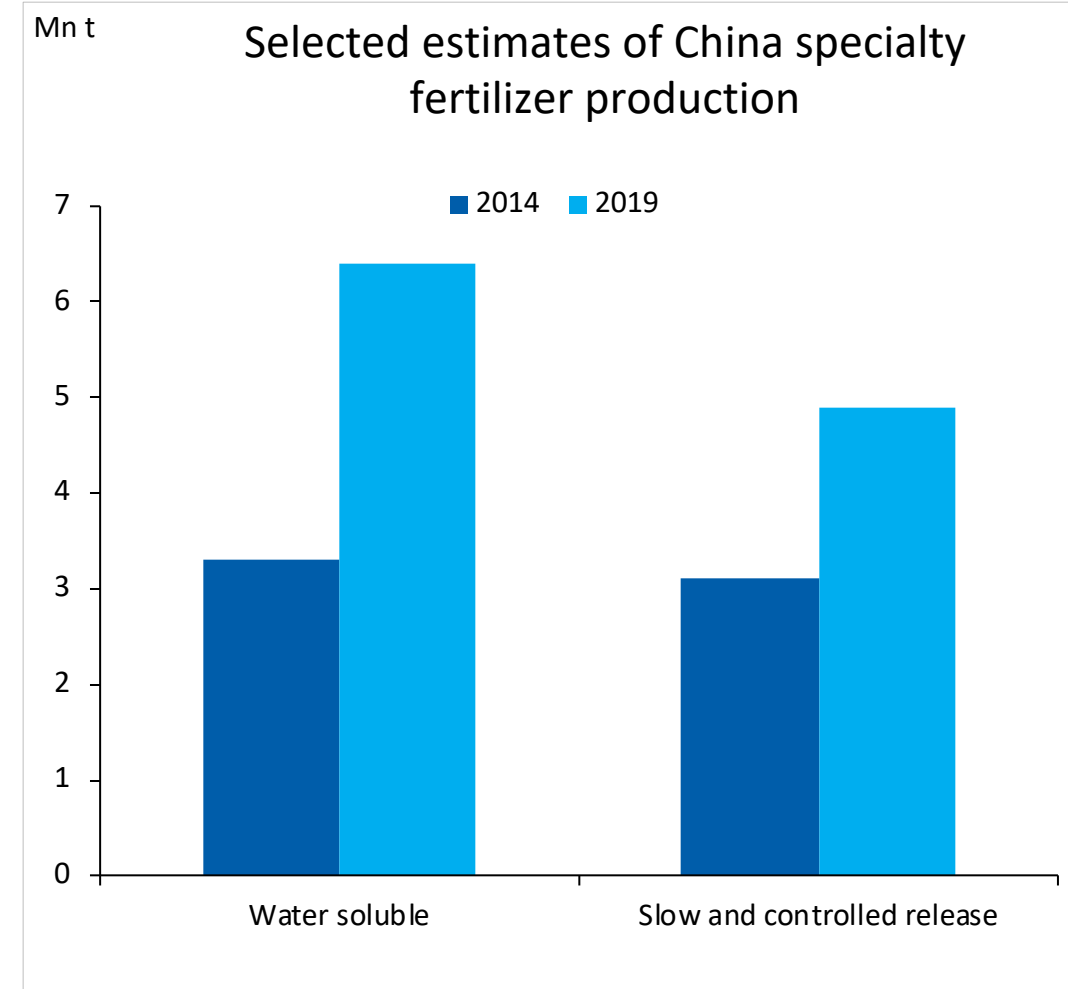
China is also adopting better performing specialty fertilizer products

Water solubles:

- Mainly used on fruits and vegetables
- China has doubled fertigation area in the last 5 years.
- Increasingly diverse group of producers

S&C release:

- Significant capacity in China, utilization thought to be about 50-60%
- Significant promotion by the state and by the main producers.
- Consumption has extended beyond cash crops to grains.
- However, relatively high price is still seen as a hurdle for further growth



There are various nutrient efficient/saving state programmes impacting nutrient use

- From 2016, the Ministry of Agriculture issued “Plan of Pilot Scheme for Farmland Rotation and Fallow”. The pilot area for crop rotation and fallow is in the table below. The project has been mainly in the nine provinces, including Inner Mongolia, Liaoning, Jilin, Heilongjiang, Hebei, Hunan, Guizhou, Yunnan and Gansu.

The pilot area for crop rotation and fallow, thousand ha					
	2016	2017	2018	2019	2020
Pilot area	410	800	1600	2500	3330

- On 10th February of 2017, the Ministry of Agriculture issued “Action Plan for organic fertilizer replacing chemical fertilizer on fruit, vegetable and tea”. The Plan required that chemical fertilizer consumption should reduce by more than 20% by 2020 in dominant production areas and more than 50% in key area or famous brand areas.
- In November of 2015, the Ministry of Agriculture issued “Corn Structural Adjustment Guidelines in Sickle-bend areas”.
 - Related to the decision to reduce maize support.
 - As the result, corn sown area reduced by 1.36 million ha in 2016. In 2017, the national corn sown area continued to decline by 3.6%.

There is a drive toward better resourced, more sophisticated agricultural practice

- Small farm holders are joining cooperatives to make the collective unit bigger, benefitting from scale economies.
- Application equipment is improving, and more farmers are getting access to better equipment
 - Big suppliers like Sinochem are cooperating with banks to supply finance.
 - Some companies like Alibaba also looking for the opportunity to invest in agriculture.

Fertilizer supplier business models are radically changing.

- Farmers are becoming better educated about application practices. Many education programmes from government, major suppliers like Sinochem, and retailers.



Sinochem MAP
For Agricultural Modernization in China
November 2018

科技创造美好农业

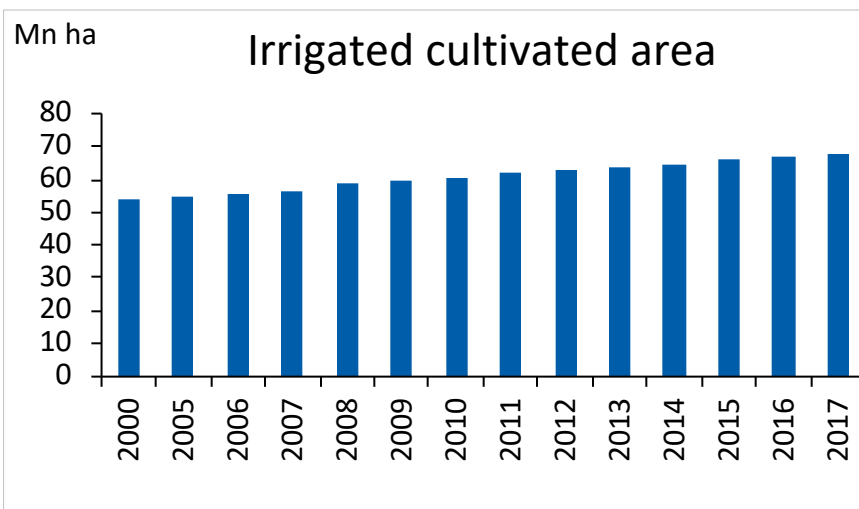
中化农业 Vision, strategy and mission Sinochem Agriculture

Vision —
Become a leading company in modern agriculture in China

Strategy —
Leading company in modern agriculture, pioneer of quality agriculture

Mission —
Scien-Tech for better agriculture

Achieve efficient planting and food security with corporate responsibility by means of core science and technology, sustainable agriculture, better life for farmer and agriculture.



中化农业 MAP Offline: technology service center + pilot farm (park)

MAP technology service center for major farmland

- 7: Seed selection, machinery service, fertilizer, technical training, matching, intelligent agriculture, protection, (test)
- 3: Crop drying, storing and sale, agriculture finance, agriculture diesel supply

MAP pilot farm

- Cooperate to build a modern farm for MAP display and demonstration
- Integrate technology solution for scale planting
- 3-5 demonstration farms for each technical service center

MAP technology service center for economic crops

- 7: Soil improvement, technical training, Water-fertilizer integration, Species improvement, Plantation protection, (smart agriculture), (quality test)
- 2: agricultural product order and sales promotion, financial service

MAP pilot parks

- Rely on local large-scale planters of economic crops for joint development
- No less than 3 demonstration parks for each technical service center, and the demonstration park area is not less than 200 mu.

中化农业 MAP Innovation and Rapid Growth

- MAP major farmland: 34 completed, 17 under construction
- MAP economic crops: 35 completed, 15 under construction

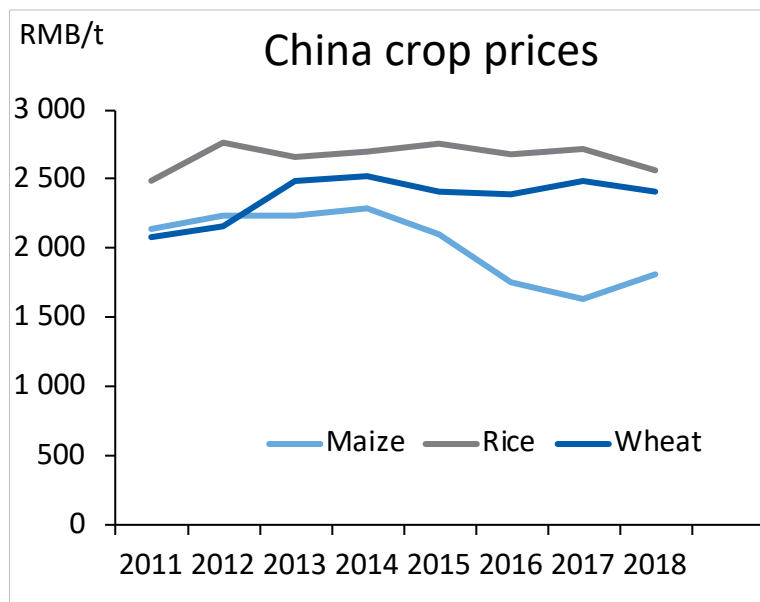
MAP

- Provided production service for more than 1.45 mu
- autumn harvest of 1.2 million tons
- 350,000 tons of agricultural product sale
- Total issuance of >300 million RMB in financial service
- Extend 70+ Strategic partner of MAP eco sphere
- Define 17 categories of Quality standard for agricultural products

Due to date October, 2018

Fertilizer has become more expensive and crop price support is reducing

- Removal of export tariffs which led to surge in urea, DAP and MAP exports led to an increase in China fertilizer prices, relative to international prices.
- Pressure on the supply side leading to tighter S/D balance
 - Strict environmental protection, closing down the low-efficient, high pollution factories, making the fertilizer price going up, and keep in higher level, but the agricultural products price is not going up in a same level the fertilizer products, also impact the farmers to buy less fertilizer and make the application more efficient.
- Government support for crop prices is reducing.
 - Best example is maize.





argusmedia.com

Argus Media
84 Theobald's Road
London, WC1X 8NL

illuminating the markets



Market Reporting
Consulting 
Events