



K+S Asia Pacific Pte Ltd KALI Division Outlook for the Asian K fertilizer market

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K+S Asia Pacific Pte Ltd Outline of presentation



- Factors affecting the Asian Agriculture
 - global & regional economic development
 - increased crops demand for food and other uses
- Mid- to long-term factors drivers of potash use
 - changing land-use/cropping patterns
 - crop management changes
- Short-term drivers of potash use
 - weather conditions
 - commodity price development
 - growers' income expectation
- Summary

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Factors affecting the Asian agriculture

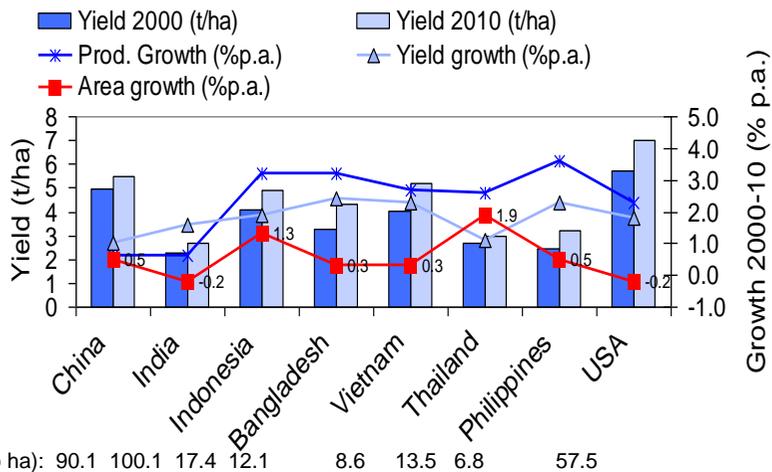


- Strong GDP growth forecast for the next 5 years
 - SEA economies to expand by 5.4 % p.a.
 - China's economy to expand by 8.3 % p.a.
 - India's economy to expand by 6.4% p.a.
- Population continues to grow within the next 20 years
 - in SEA from currently 593 Mio to 706 Mio
 - in China from currently 1.376 Mio to 1.434 Mio
 - in India from currently 1.190 Mio to 1.530 Mio
- Per capita cultivated area further shrinks until 2050
 - by about 32% in SEA from 0.19 in 2000 to 0.13 ha
 - by 10% in China from 0.10 in 2000 to 0.09 ha
 - by about 40% in India from 0.16 in 2000 to 0.09 ha

Sources: OECD, 2013, UN Pop. Division, 2010, GAEZ, 2009

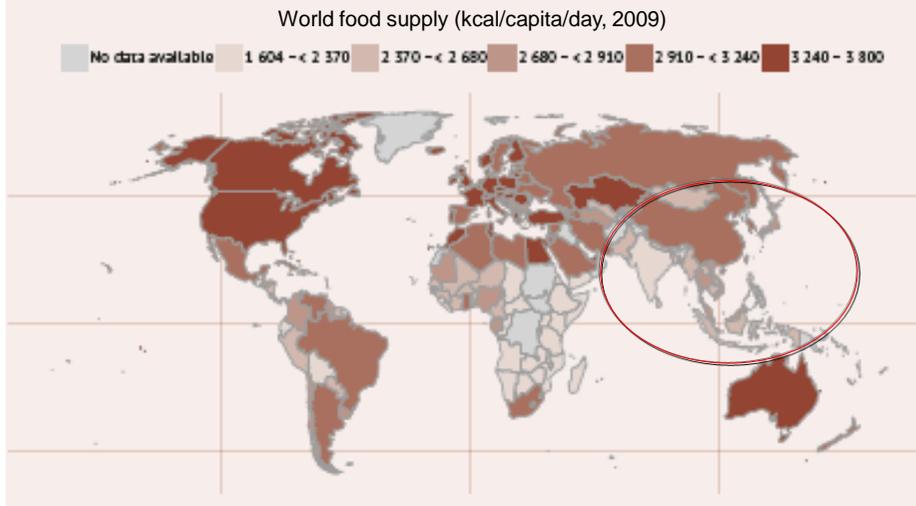
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Cereal production in Asia: Coping with limited land



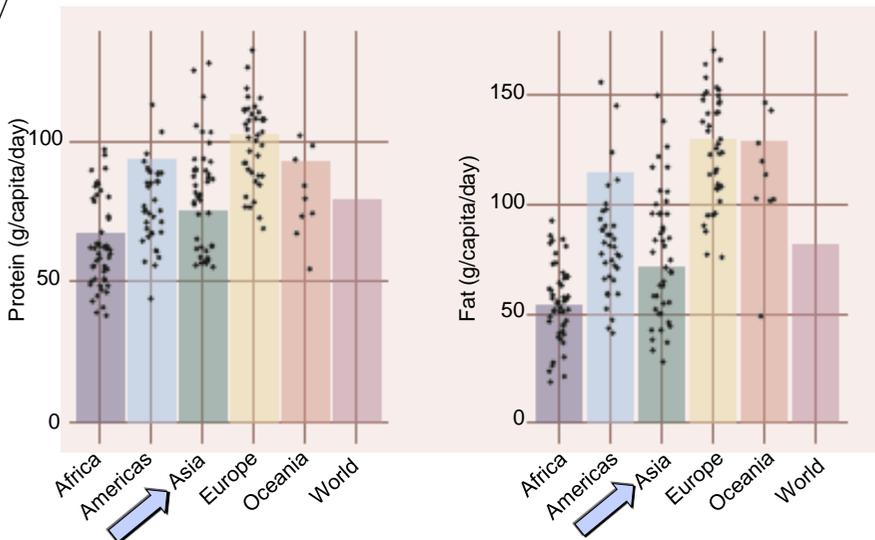
Source: FAO, Statistics Division (FAOSTAT)

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Source: FAO, Statistics Division (FAOSTAT)

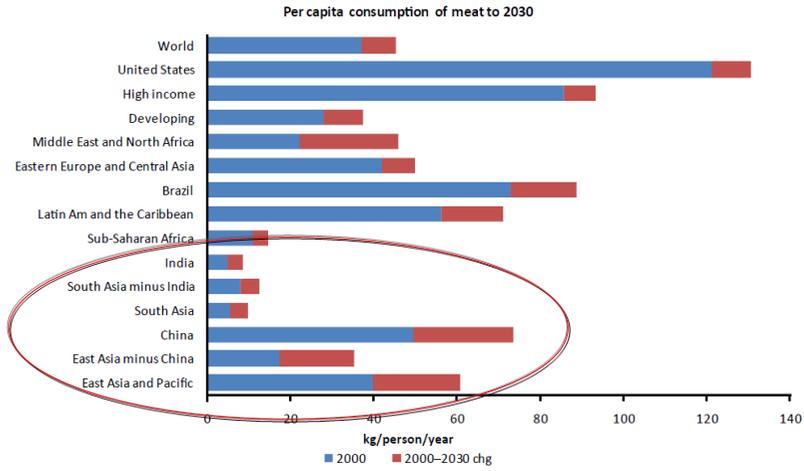
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Source: FAO, Statistics Division (FAOSTAT), 2009

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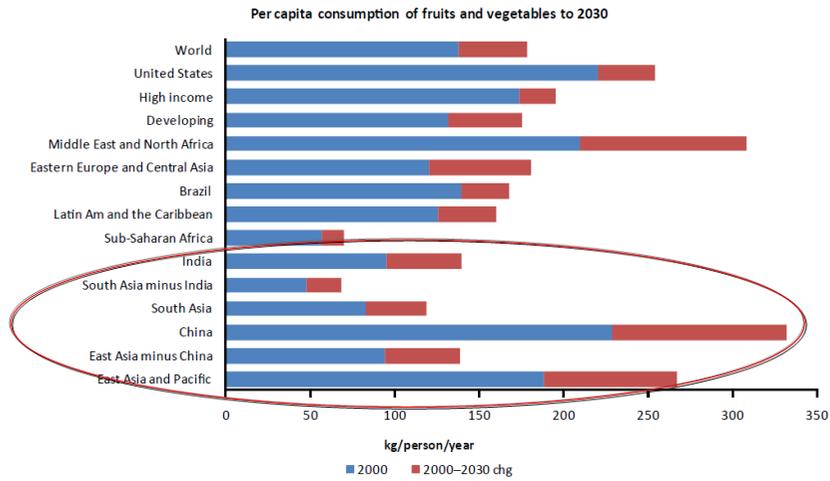
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Per capita meat consumption increases



Source: IFPRI, Feeding the Future's Changing Diets

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Per capita fruit and vegetable consumption

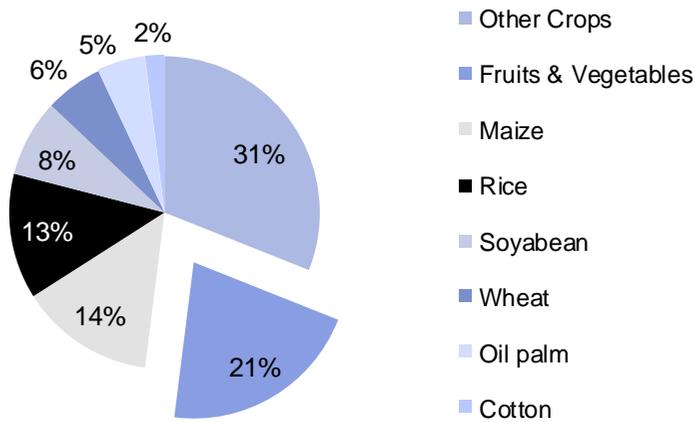


Source: IFPRI, Feeding the Future's Changing Diets

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Potash use by crop type



Source: Fertecon, 2011, IFA, 2009

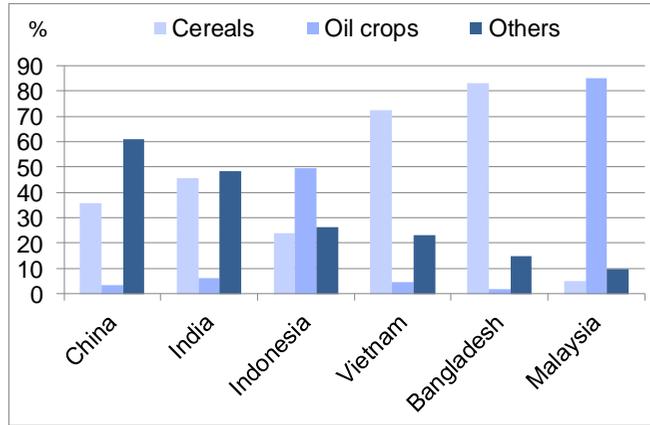
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- Diminishing land resources in Asia require higher intensity of fertilization, especially of K.
- Changing diets call for changing land-use/crops pattern towards increased planting of crops with higher K demand (maize, oil crops, fruits and vegetables).
- Oil palm, as the highest productive crop among oil crops, will further play a dominant role in the expansion and intensification of agriculture in SEA. It will dominate the world's vegetable oil supply under diminishing land resources and protection needs of the existing rainforest areas.

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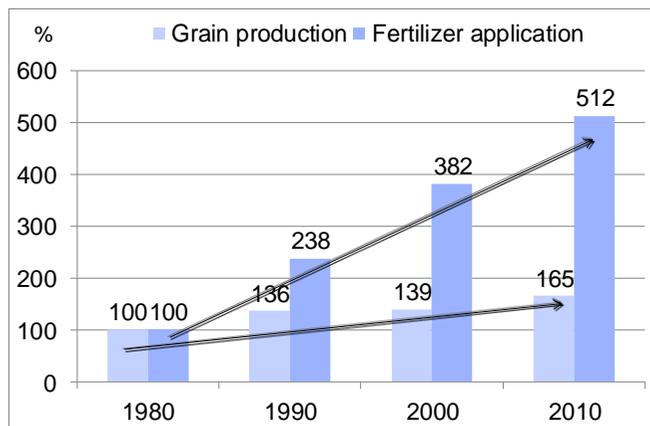
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E-SEA: Potash use by crop type in % of total



Source: Heffer, 2009

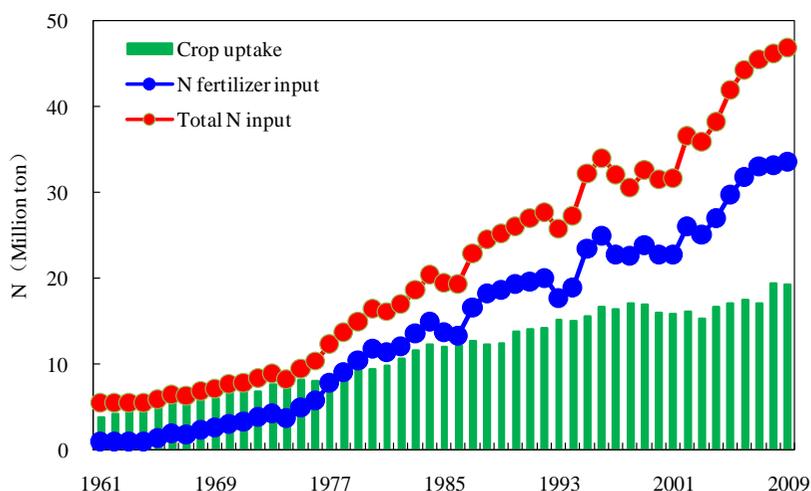
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Grain production and fertilizer use in China



Source: Zhang, WF., 2012

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- N fertilizer input is equivalent to 1.7 times crop uptake
- Total N input is equivalent to 2.4 times crop uptake

Source: Zhang, FS. and Zhang WF. 2012

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Hybrid maize in China (2010-2012)

Year	Treatment	n	Grain yield (t/ha)	Fertilizer rate (kg/ha)			Gross profit (US\$/ha)
				N	P ₂ O ₅	K ₂ O	
2010	FP	138	8.6	225	53	40	2364
	Soil test	127	8.8	195	47	69	2454
	NE *	138	8.7	138	50	63	2433
2011	FP	185	10.0	222	64	44	2978
	Soil test	90	10.5	215	65	86	3039
	NE	185	10.6	161	49	61	3097
2012	FP	138	10.6	235	67	59	3285
	Soil test	109	11.1	204	60	72	3485
	NE	138	10.9	167	63	74	3477

* NE = Nutrient Expert, fertilizer applied based on site specific nutrient management

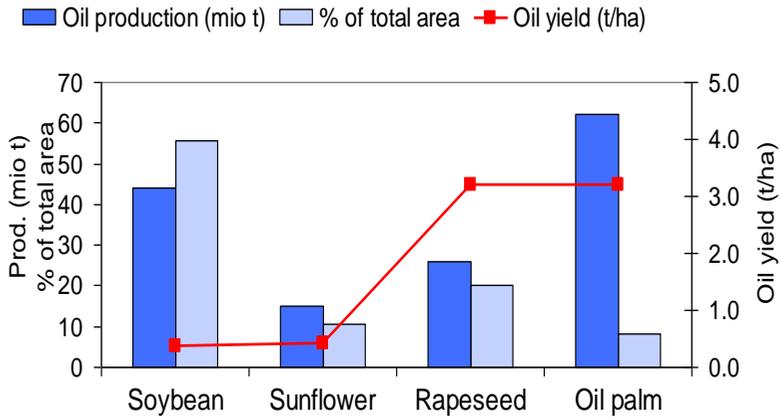
Source: Pamplino, M.F. et al. (2013)

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Oil palm highest oil production per unit area



Oil production of various oil crops, 2013



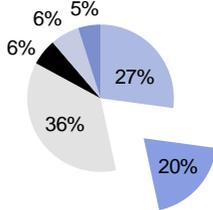
Source: based on Oil world, 2013

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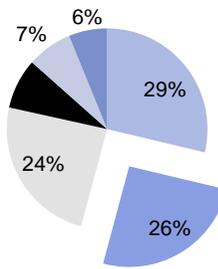
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Growing use of palm oil as feedstock for biodiesel



Feedstock for biodiesel 2009:
 (Total: 16.18 mio t)



Feedstock for biodiesel 2013:
 (Total: 24.73 mio t)

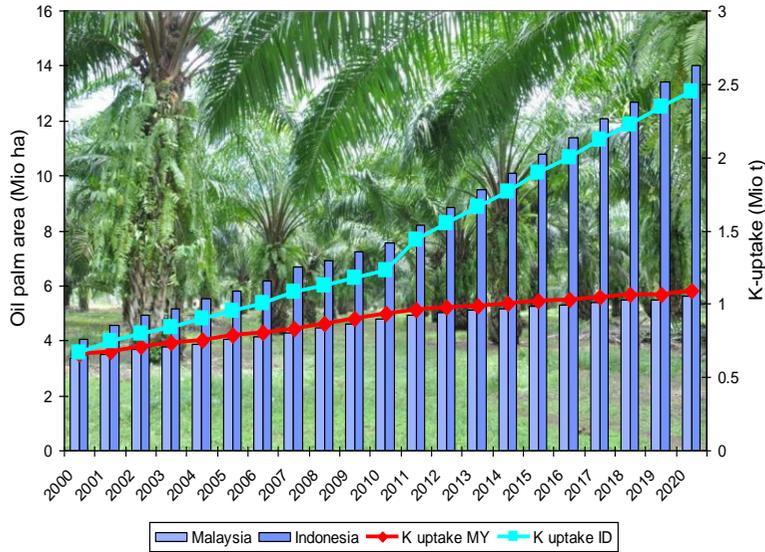


- Soya oil
- Palm oil
- Rape seed oil
- Used oil
- Tallow
- Others

Source: Oil World, 2013

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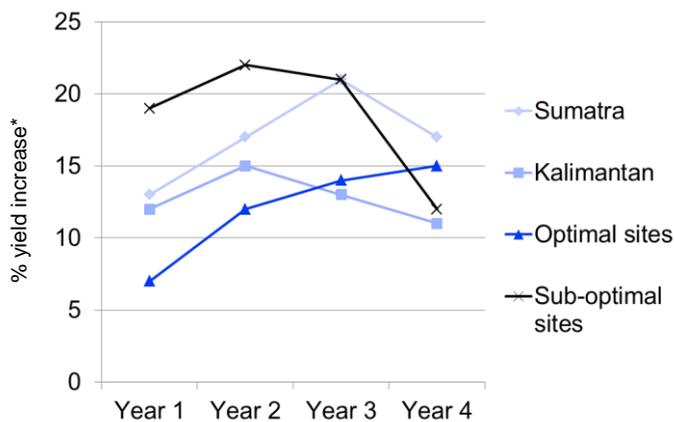
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Oil palm expansion, a driving force for K use



Source: USDA, 2010, MPOB, 2010, IPNI

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Oil palm: Best management for larger yields

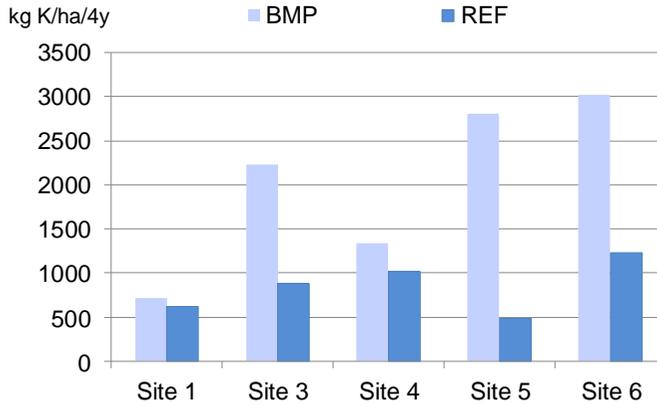


*Fresh fruit bunch yield increase in Best management plots over reference plots

Source: Oberthuer et al. 2013

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Oil palm: BMP increases K application

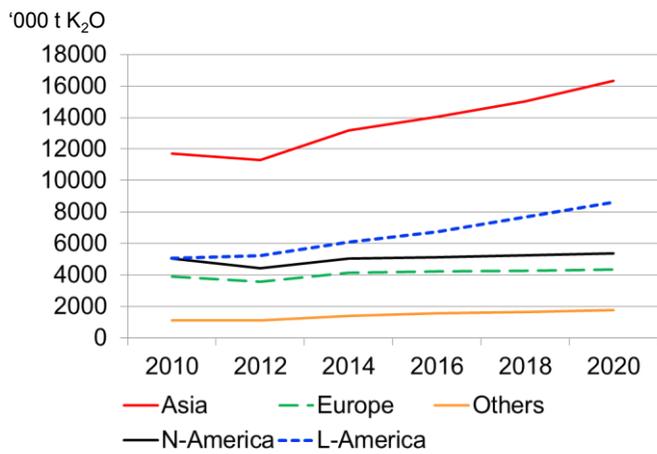


*Total K application (organic plus inorganic) in BMP plots compared to REF plots over a period of 4 years

Source: Oberthuer et al. 2013

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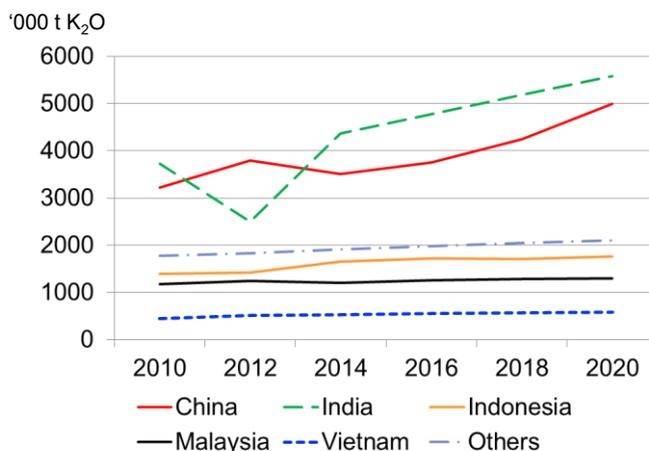
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Potash demand in Asia versus other regions



Source: Fertecon, 2012

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Potash import by Asia, selected countries



Source: Fertecon, 2012

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China: Potash import and consumption forecast



K ₂ O ('000 MT)	2013	2014	2015	2020	Data source
Consumption	5,458	5,476	5,494		CAU
Consumption	7,900				BOBAC
Import	3,700				
Import	3,850	3,510	3,660	5,580	FERTECON
Consumption	6,550	6,850	7,250	9,000	
Consumption			10,500	11,800	CISIA
Import			5,800	5,800	
Consumption	5,700				CRU

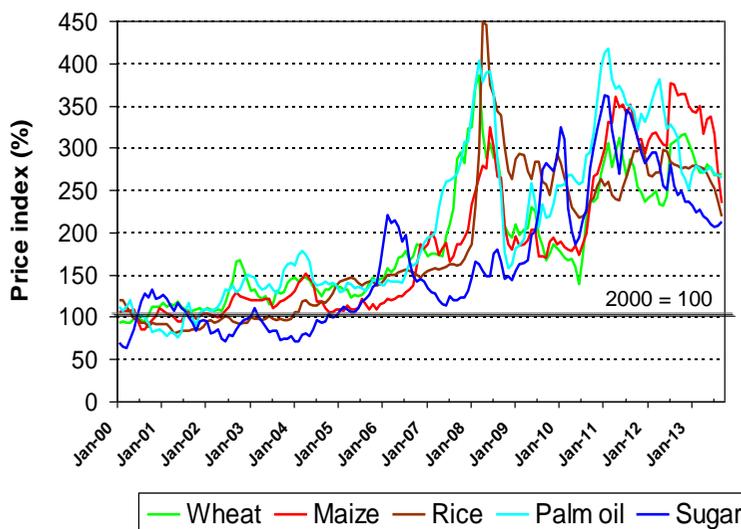
Source: Various

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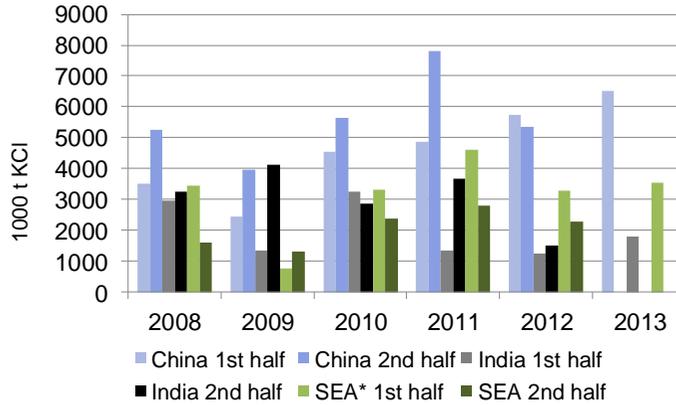


Weather conditions

- China, droughts in N-China affected 2.09 Mio ha and typhoons damaged 152 000 ha of crops will push for increased inputs in 2014 to warrant the supply of increased food demand.
- Temporary droughts in VN and Thailand as well as heavy floods delayed fertilizer consumption in 2013, which is expected to resume in 2014.
- India and the whole sub-continent experienced good monsoon rains this year, promoting yields and income of farmers.
- Indonesia's CPO production this year will most likely be lower than expected because of the wet weather in the last dry season disturbing pollination, reducing pressure on CPO stock levels and prices.



Source: World Bank



*including Indonesia, Malaysia, Philippines, Thailand and Vietnam

Source: IFA, 2013

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- Asia has to produce more and higher value crops to supply the growing populations' with more protein, fat and bio resources on very limited land.
- In the mid- to long-term, potash use in Asia will be further increased, driven by both expansion and intensification of K-demanding crops/cropping systems.
- With few exceptions, generally favorable weather led to good harvests causing temporary pressures on crops prices, a trend likely to persist during 2014.
- With a good 1st half deliveries, K sales to Asia seized in the second half, triggered by trends in other nutrients and negative statements.
- K demand is likely to resume in 2014 after induced uncertainties are overcome, with a tendency of exceeding the usual growth rates due to under-supply in Q3-4.

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