



Mineral Nitrogen and Rice Production in Myanmar



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Outline

- Country Profile
- Myanmar and Rice Production
- Mineral Nitrogen, Food Security and Nutrition
- Whither a miracle nutrient?
- Mineral Nitrogen and Future Research in Myanmar
- Conclusion

Country Profile

Land Area

- 676,557 Km²,
between 9 32' N to 28
32' N ;92 10' E to 101 11' E

Population

- 51.7 Million
- Growth rate of 1.75%,
- 135 nationalities
- Population density:76/km²

GDP

- 44.28 \$ Billion

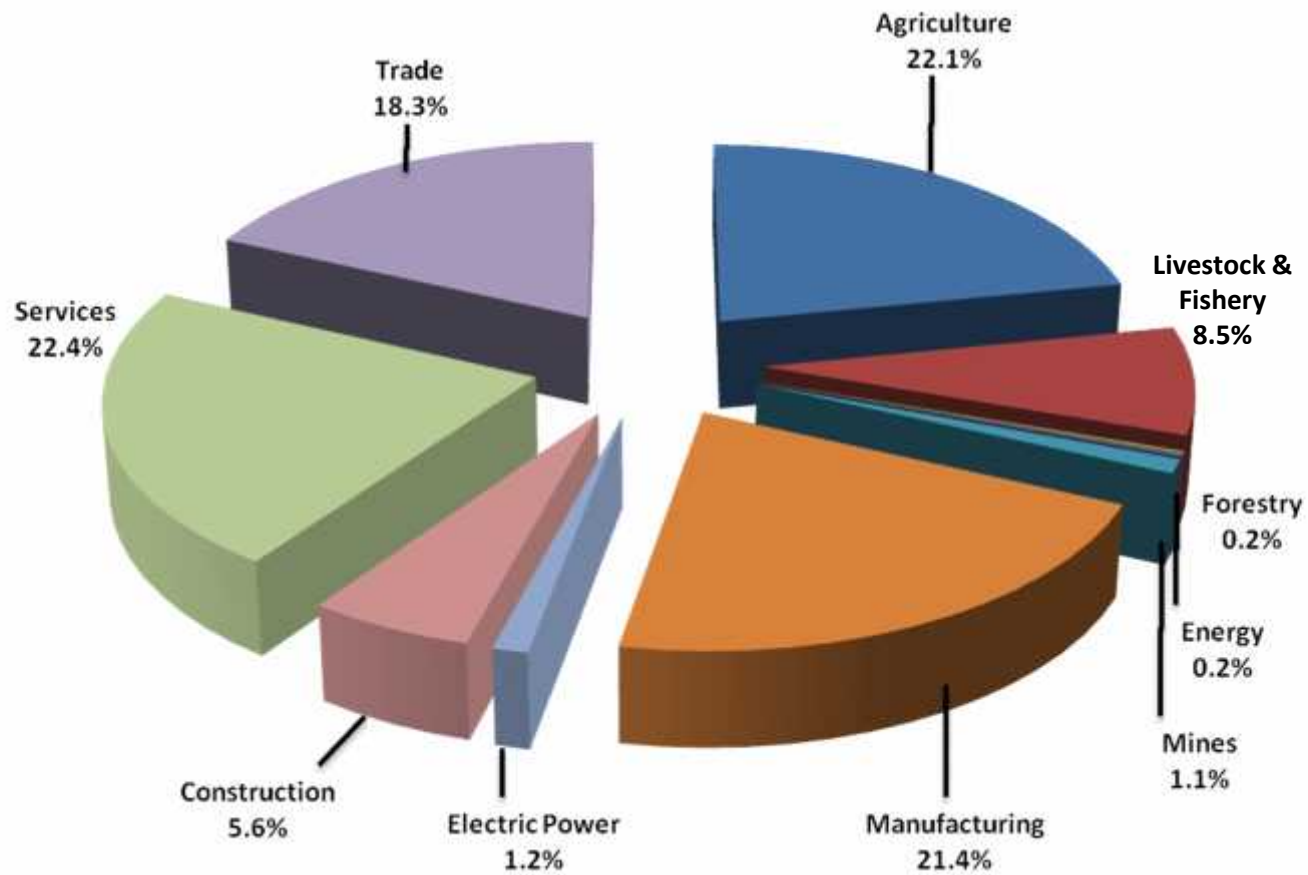
Social Indicators

- Life Expectancy() - 67.5
() - 69.9
- Mortality Rate (under 5) - 2.83%
- Birth Rate - 67.1%



Source: Ministry of Agriculture and Irrigation (MoAI), 2015

Myanmar and Rice Production



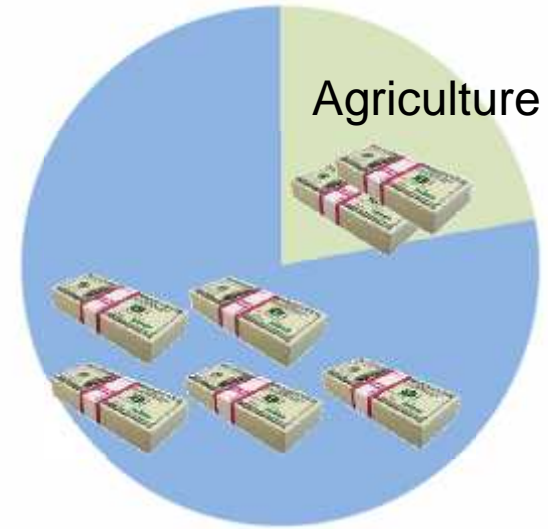
Source: MoAI, 2015

Population



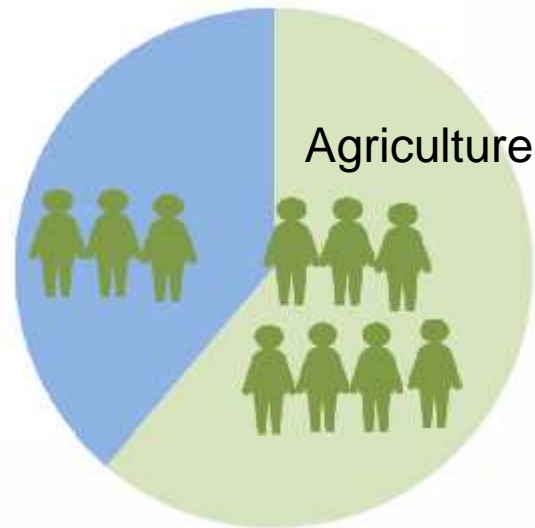
70 % of population live in rural areas. (MoAI, 2014)

GDP



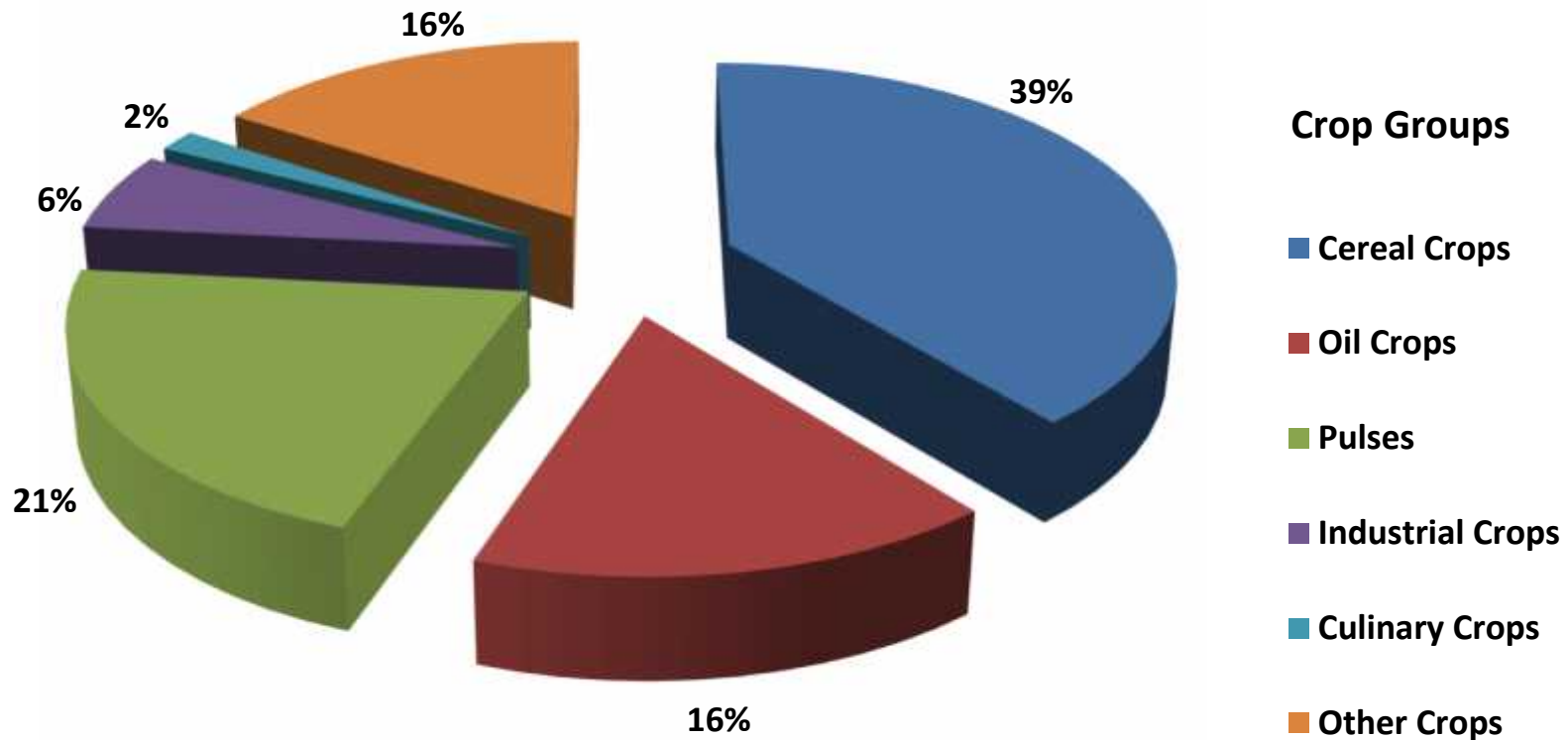
Agricultural sector accounts for 22.1% of total GDP (MoAI, 2014)

Employment

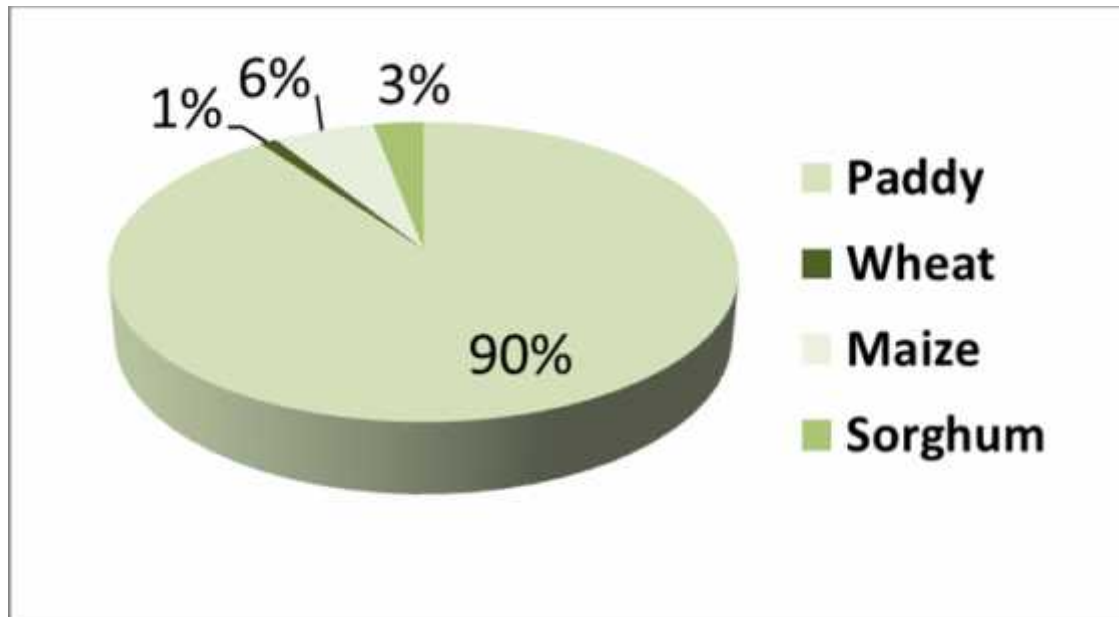


Agricultural sector employs 61.2 % of the labour force (MoAI, 2014)

Sown Area of Crop Groups



Sown Area of Cereal Crops

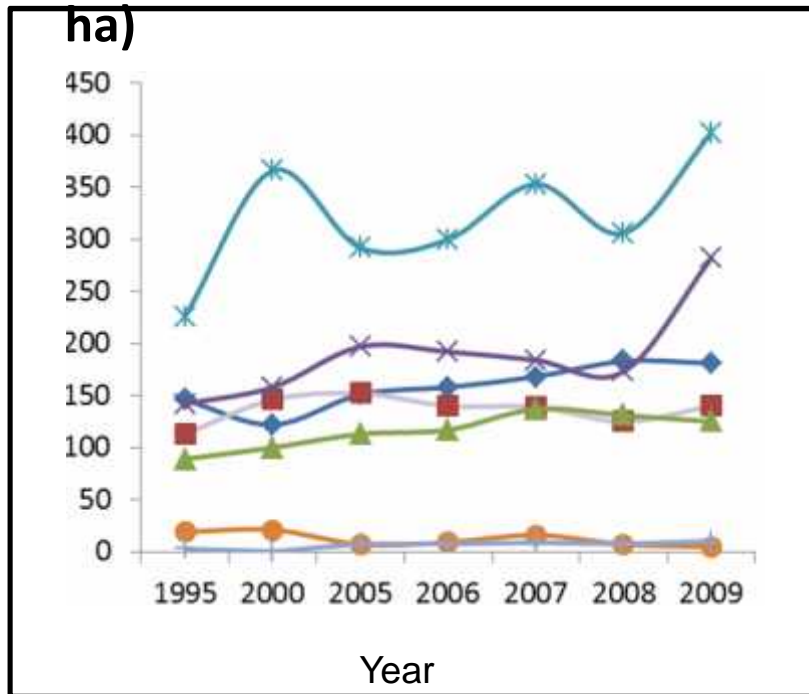


Major rice growing areas

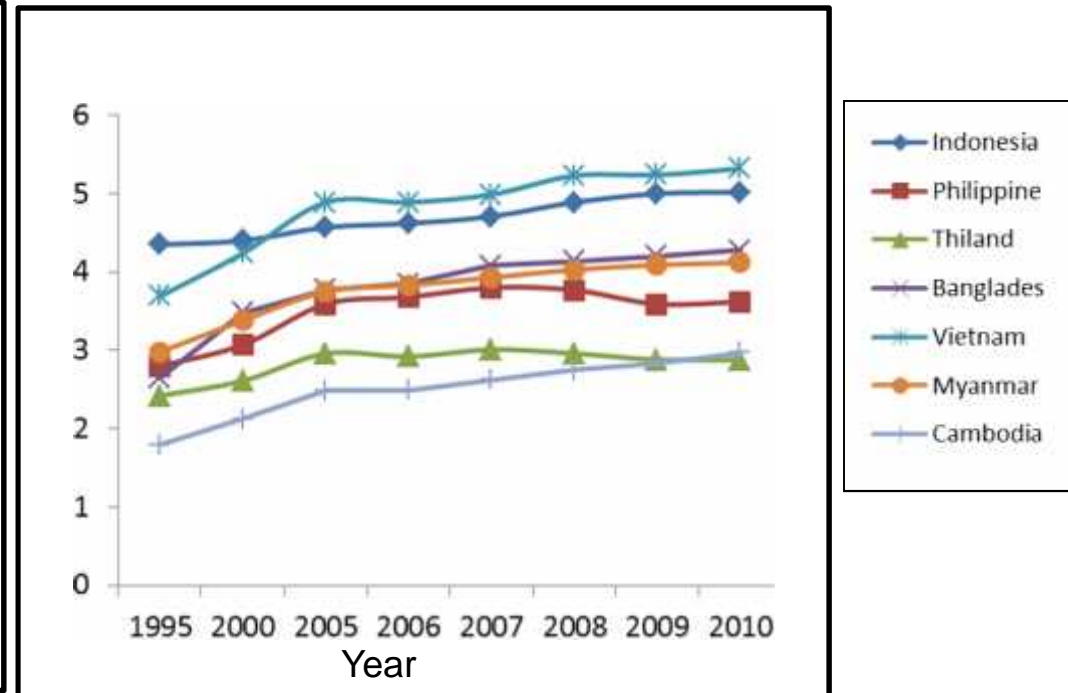
Divisions	Share	
	in rice production (%)	in population (%)
Ayeyarwady	26	13
Bago	17	10
Sagaing	12	11
Yangon	6	12
Others	39	53

Fertilizer Use and Rice Yield (1995 - 2009)

Fertiliser use in NPK (kg ha⁻¹)

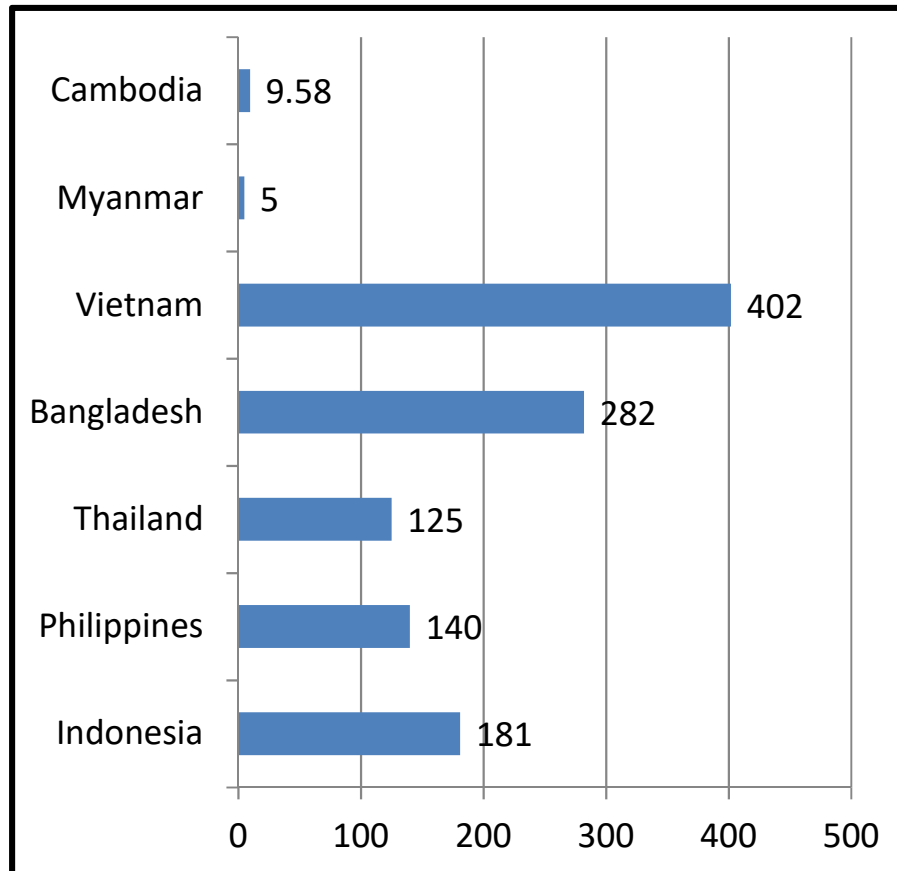


Yield (t ha⁻¹)

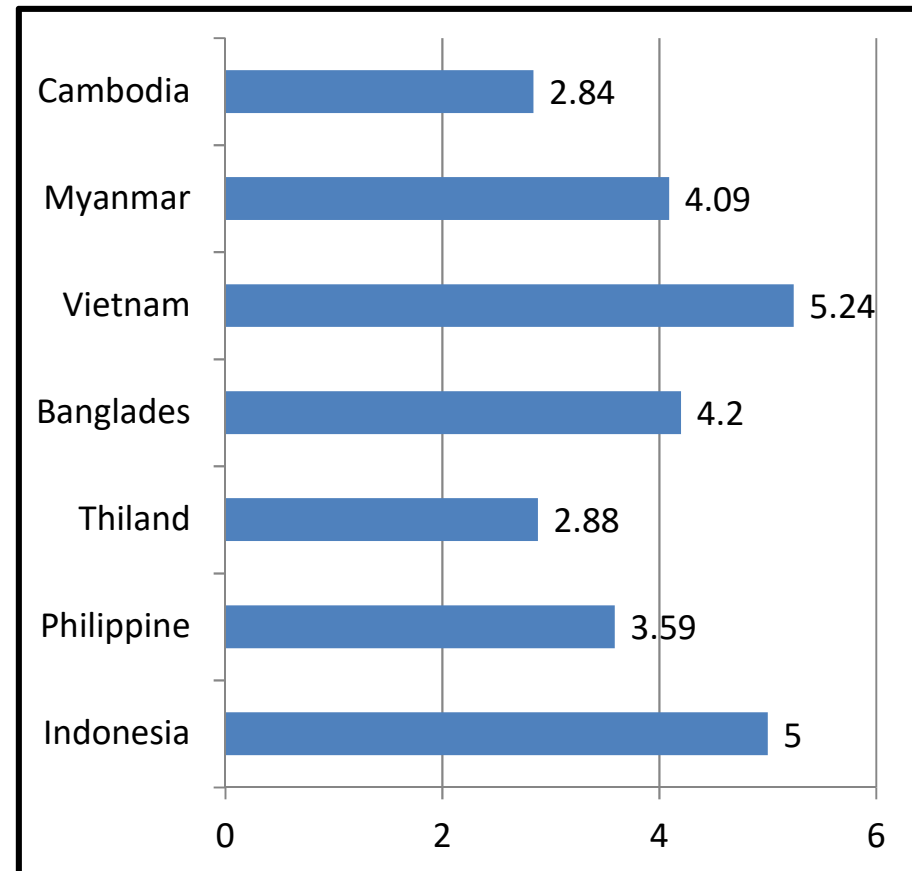


Fertilizer Use and Rice Yield (2009)

Fertiliser use in NPK (kg ha⁻¹)



Yield (t ha⁻¹)



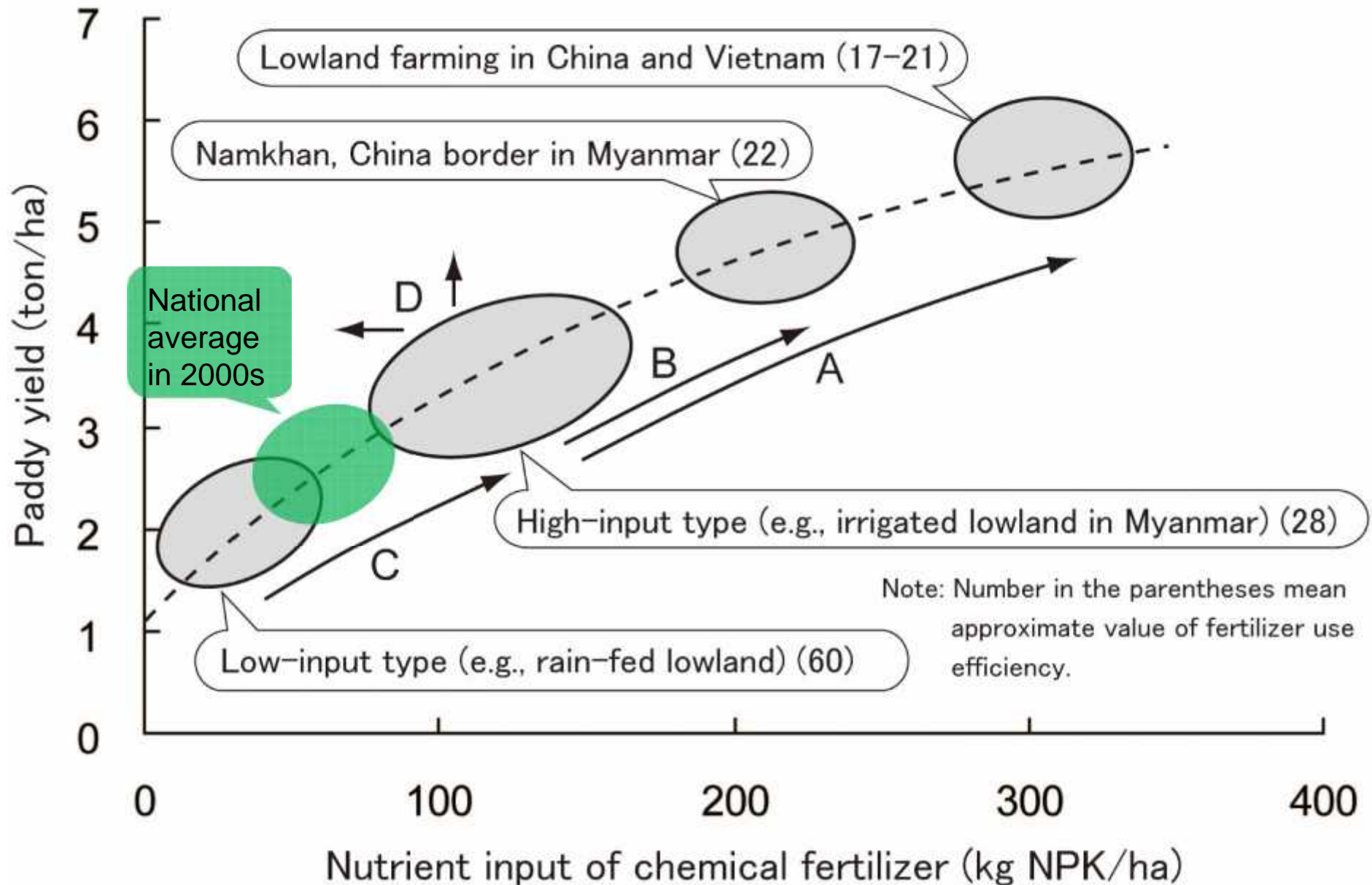
Source: Rice Almanac, 2013

Mineral Nitrogen, Food Security and Nutrition

- N was the most limiting nutrient for lowland rice
(Denning et.al (2013) and Aung Naing Oo et.al (2016))
- Limited use of mineral fertilisers is a major factor limiting rice productivity in Myanmar
(Garcia et al., 1999).
- N increase grain yield and protein content
(Eppendorfer 1975, Htain Lin Tun et.al,2007)

Fertilizer input and paddy yield in Myanmar

(Matsuda, 2016)



Mineral Nitrogen and Future Research in Myanmar

- National rice yield is stagnant at 3~4 t ha⁻¹ since 1995
- Nitrogen (N) rates applied by Myanmar farmers are generally low: Fertiliser rates 5 to 21 kg NPK ha⁻¹ (1995-2009)
- No consideration from economic aspects and environmental issues.
- Future research based on economic and environmental issues should be prioritized for the collaborative research works with international organizations.

MoU signing ceremony between Yezin Agricultural University and ACIAR



SMCN/2014/044: Management of Nutrients for Improved Profitability and Sustainability of Crop Production in Central Myanmar



Location of the Experimental Sites



Cropping Pattern at Different Locations

No.	Site	Location	Crops
1.	Yezin (YAU farm)	19° 50' 08.9" N 96° 15' 49.9" E	Rice-rice
2.	Tatkon (DAR farm)	20° 08' 16.1" N 96° 12' 50.6" E	Maize-legume
3.	Laythar (farmer's field)	19° 51' 23.8" N 96° 14' 50.0" E	Maize-legume
4.	Taungoo (farmer's field)	18° 55' 18.5" N 96° 19' 50.7" E	Rice-rice

Visiting YAU Laboratory



Visiting YAU Laboratory



Visiting Experimental Sites



Conclusion

- Myanmar- large area of land and sufficient water resources to extend rice production
- Research on mineral nitrogen and rice productivity for decades

**Productivity &
Sustainability**



**Profitability &
Sustainability**

Thank You

