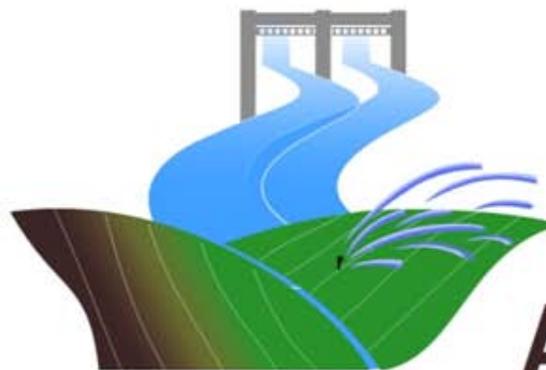


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The long-run demand for irrigation in Asia

C. Peter Timmer (Harvard University) and David Dawe (FAO)



**Asian
Irrigation Forum**

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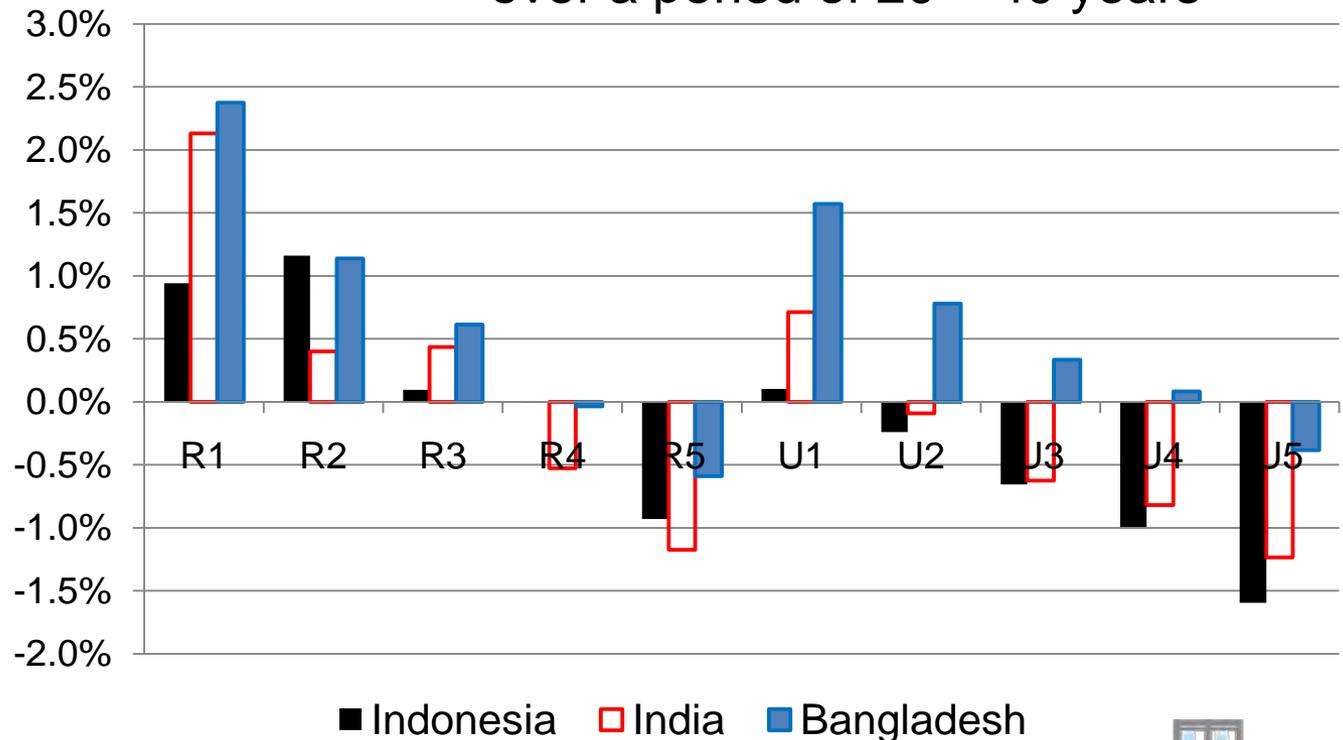
Three basic drivers that will affect the nature of demand for irrigation services

- A decline in Asian rice consumption and increased dietary diversification
- Structural transformation of Asian economies that has started to affect farm size
- Rapid development of modern supply chains

Rice consumption declines with higher incomes and increased urbanization

Annual rate of change in rice consumption over a period of 20 – 40 years

R = Rural
U = Urban



Source of raw data: national household surveys

Indonesia (1967-2006)

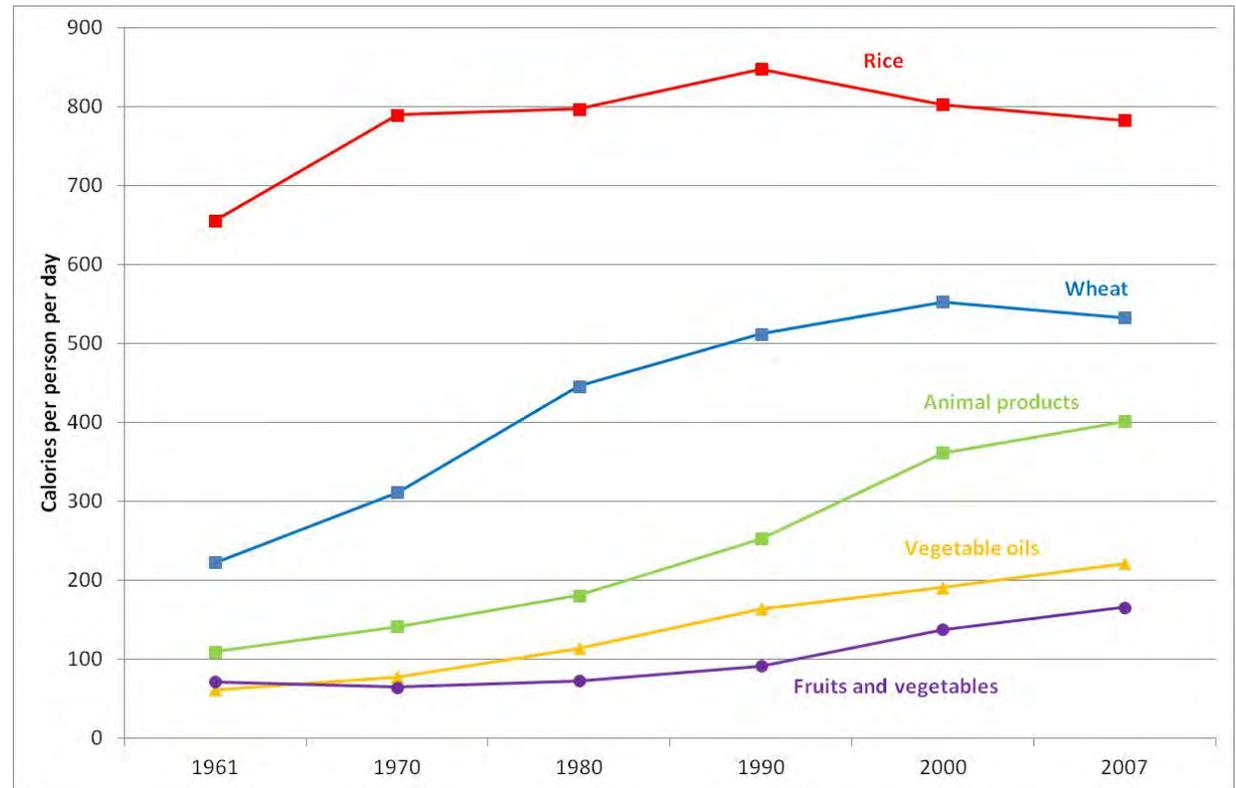
India (1983-2005)

Bangladesh (1983-2005)

Source of graphic: Timmer, Block and Dawe (2010)

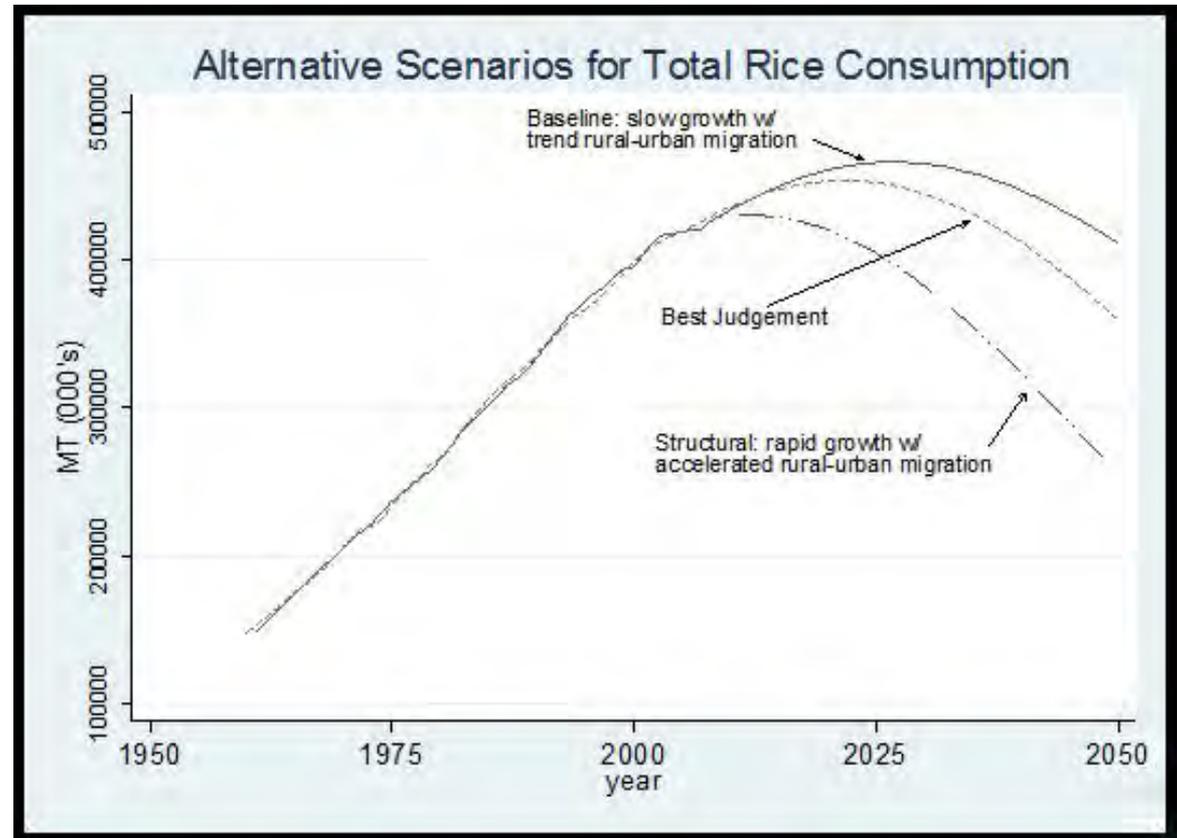
Asian diets are diversifying

Source: FAO food balance sheets



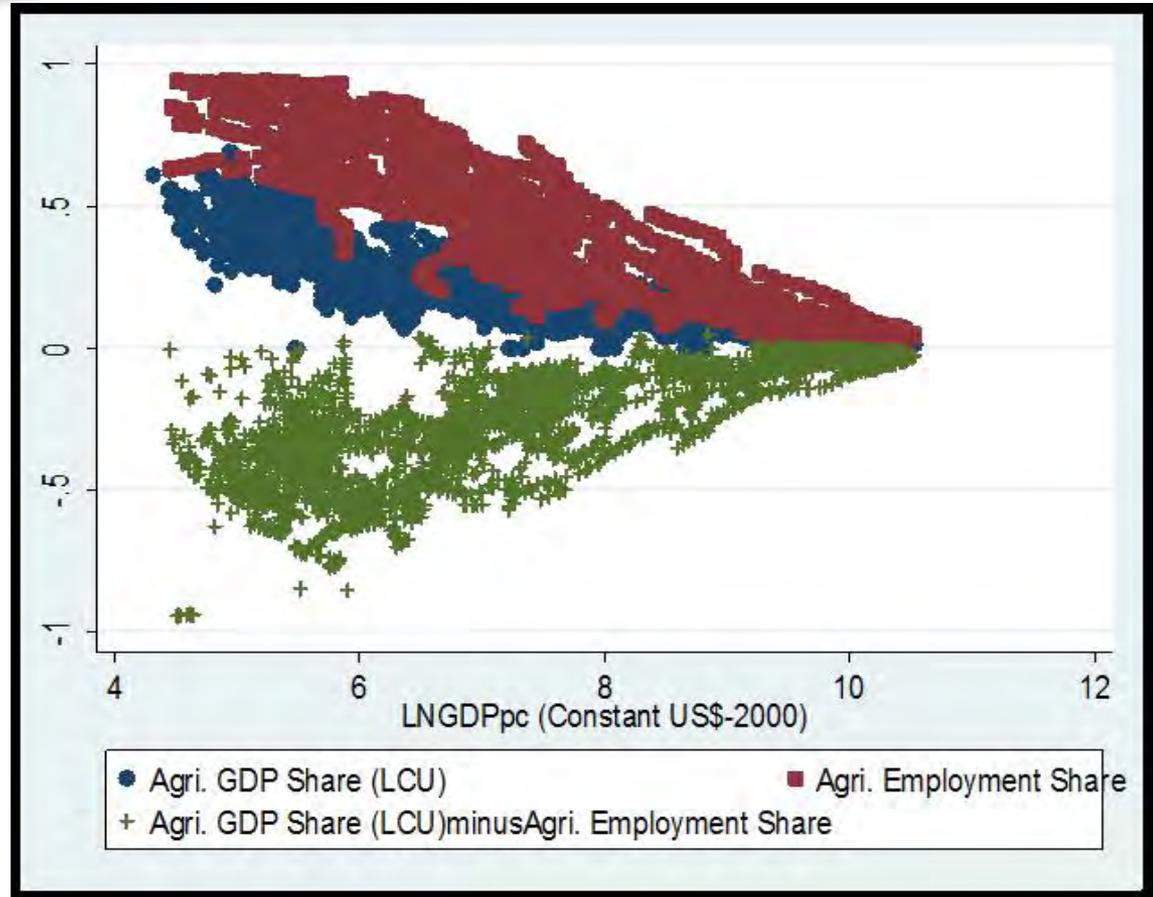
When will Asian rice consumption begin to fall?

Source: Timmer, Block and Dawe (2010)



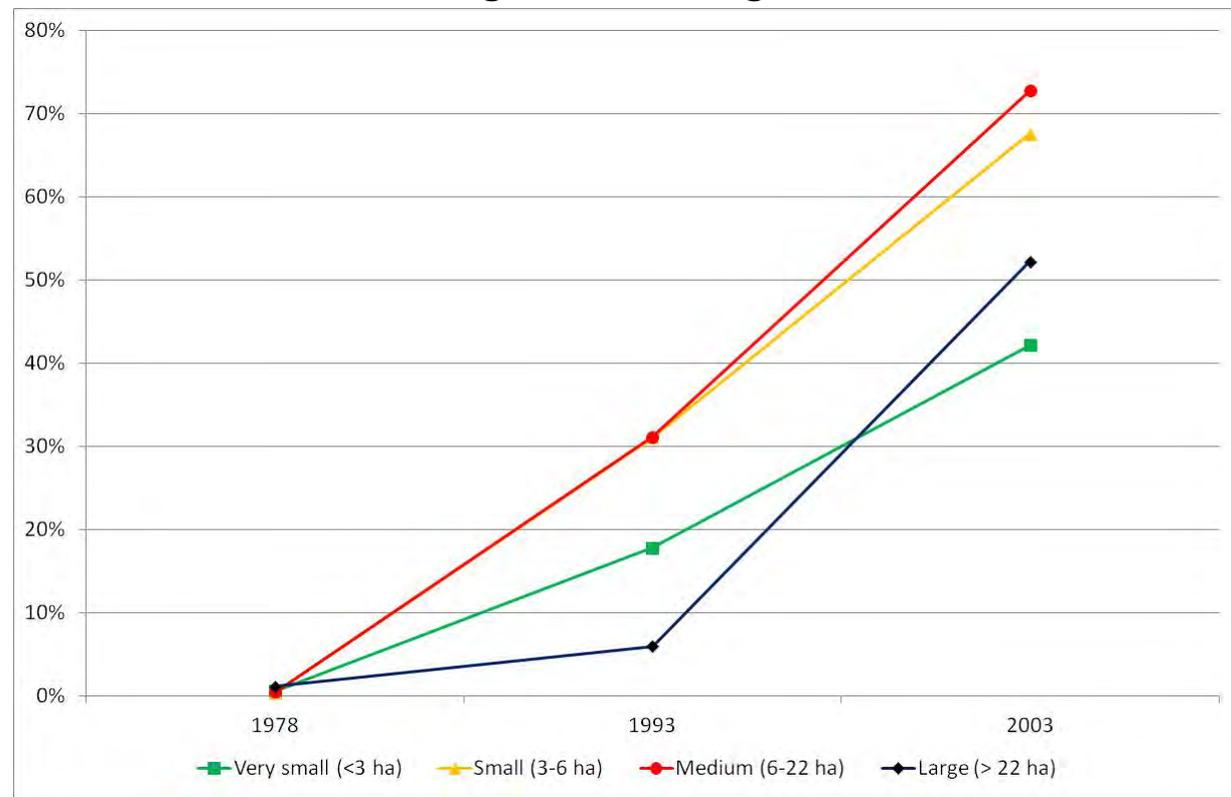
Sustained growth has led to a structural transformation of Asian economies

Source: Timmer and Akkus (2008)



Structural transformation has led to an agricultural transformation (e.g., mechanization)

Percentage of farms in Suphan Buri, Thailand using harvesting machines



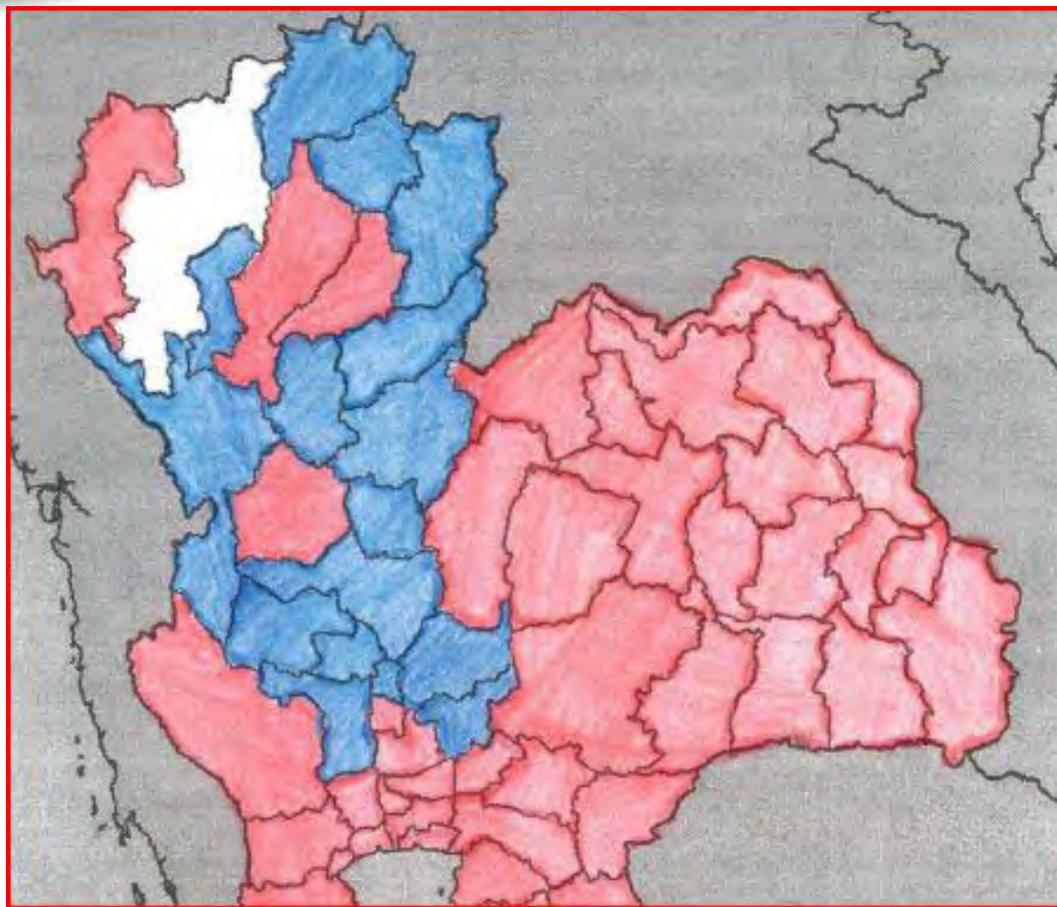
Source: Dawe (2005)

Operational land consolidation is also starting to take place . . .

Change in farm size
by province, Thailand,
1993 - 2003

(Blue indicates increase;
Red indicates decrease)

Source: Dawe (2005)



. . . leading to changing farmer demands

- As operational farm size increases, farmer demand for more modern, sophisticated and scientific technologies (including irrigation) will also increase

Modern food supply chains

- Desire for consolidation of suppliers will lead to further increases in operational farm size
- Farmers and consumers will be increasingly connected
- Consumers will want changes not only in what they eat, but also in how what they eat is grown

Summary

- Farmers will grow less rice and a wider variety of other crops
- Rural to urban migration will continue, and the remaining farmers will manage larger plots of land
- Farm production decisions will need to take more account of consumer demand



Key implication

- We should design and build systems that farmers want, and farmers will want different systems than what has been built in the past.