



Overcoming Critical Constraints to Agricultural Productivity Growth in Asia and the Pacific

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Some Qualifications: For most of the figures and discussion, Asia and the Pacific region covers the following sub-regions:

- (i) East Asia: China, Japan, and South Korea;
- (ii) Southeast Asia; Cambodia, Indonesia, Lao PDR, Malaysia, Myanmar, Philippines, Thailand, Timor-Leste, and Vietnam;
- (iii) South Asia: Bangladesh, India, Nepal, Pakistan, and Sri Lanka; and
- (iv) the Pacific Islands in Melanesia, Micronesia, and Polynesia (excluding Australia and New Zealand).

The study is in progress. More work on TFP estimates is being done. Edible oils, which is part of the study is still not included here.

Outline

1. Introduction: Focus on rice and wheat
2. Production Growth: Contribution of Area and Yield
3. Sources of Growth: Factor inputs and Total Factor Productivity
4. Constraints to Achieving More Sustainable Production
5. Key Policy Recommendations and
6. Conclusion

INTRODUCTION

Dominance of rice and wheat in Agriculture's Gross Value Added (US\$ million in 2004-2006 prices)

	1961-69	1970-79	1980-89	1990-99	2000-10
Asia and Pacific (gross value)	320941	404041	539753	748671	989591
Share of Rice (paddy)	29.79	28.82	25.46	20.74	16.27
Share of Wheat	3.74	4.70	5.83	5.75	4.90
East Asia (gross value)	203135	249064	325640	441906	582978
Share of rice (paddy)	35.38	34.51	29.33	22.67	16.13
Share of Wheat	2.76	3.16	4.52	4.32	3.18
South Asia (gross value)	66204	84921	115932	163025	213214
Share of rice (paddy)	23.94	23.30	22.49	21.14	18.68
Share of Wheat	5.86	8.73	10.07	10.16	9.51
Southeast Asia (gross value)	25794	35789	52366	74810	106298
Share of rice (paddy)	30.07	29.53	29.92	27.19	24.96
Pacific Islands (gross value)	327	367	426	478	492
Share of rice (paddy)	1.80	1.52	1.71	1.28	0.87

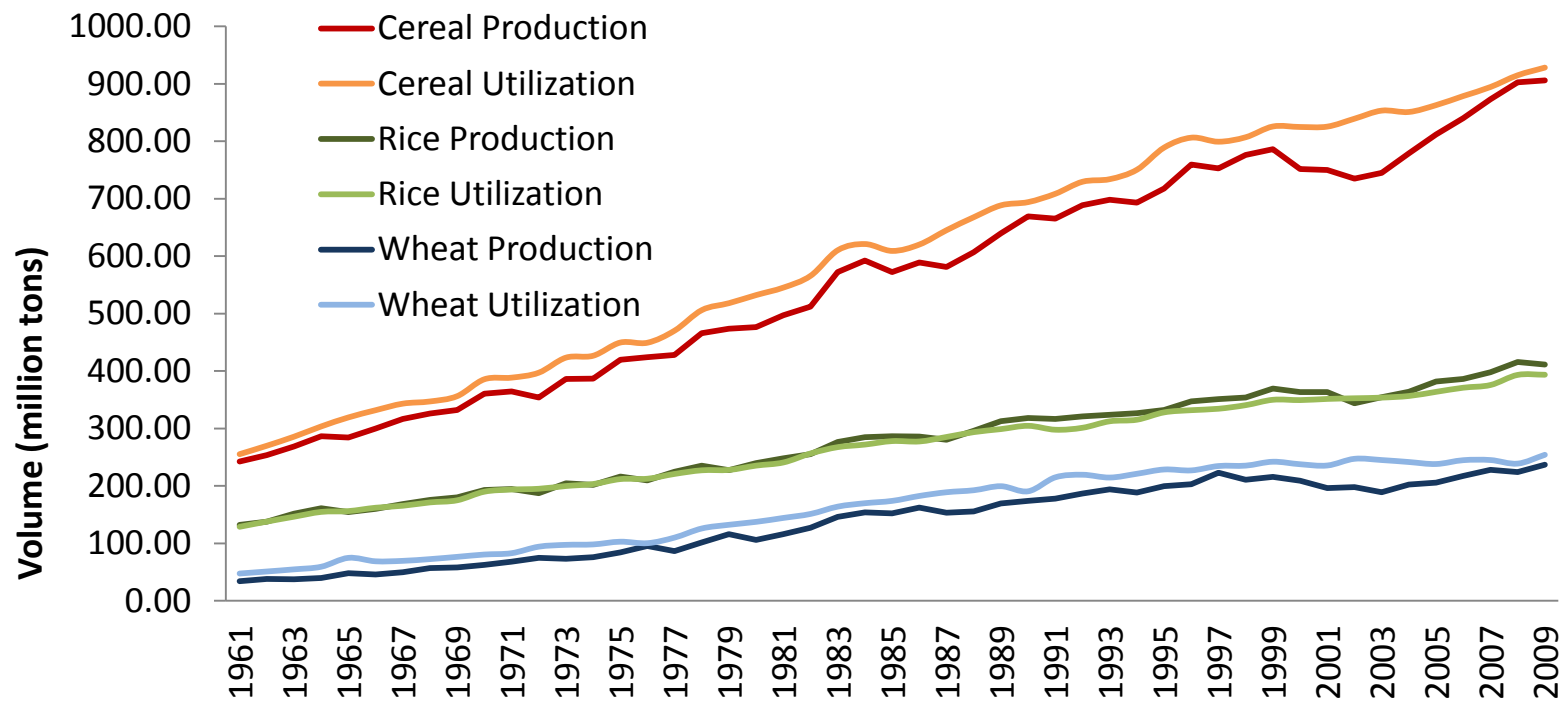
Dominance in Consumption

Despite significant changes in the demand structure, cereals continue to be overwhelmingly important

- Rice accounts for 24% of caloric intake in Asia-Pacific: increases to 34% in East, South East and South Asian countries
- Wheat accounts for 16% of caloric intake, but increasing

Looming Threat: Production is falling short of demand

Cereals production and utilization, 1961-2010

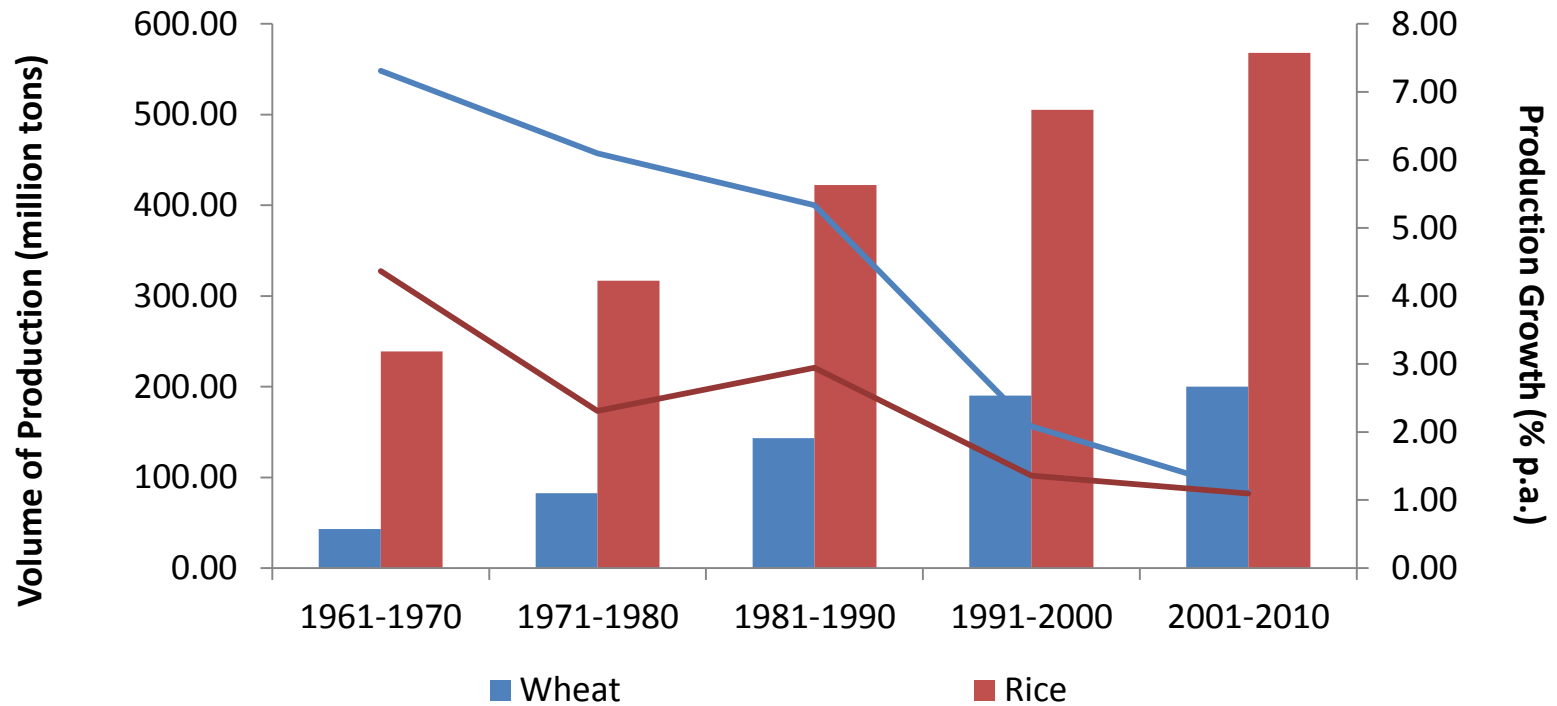


Source: FAOSTAT online, accessed June 2012

Questions this presentation seeks to probe and answer

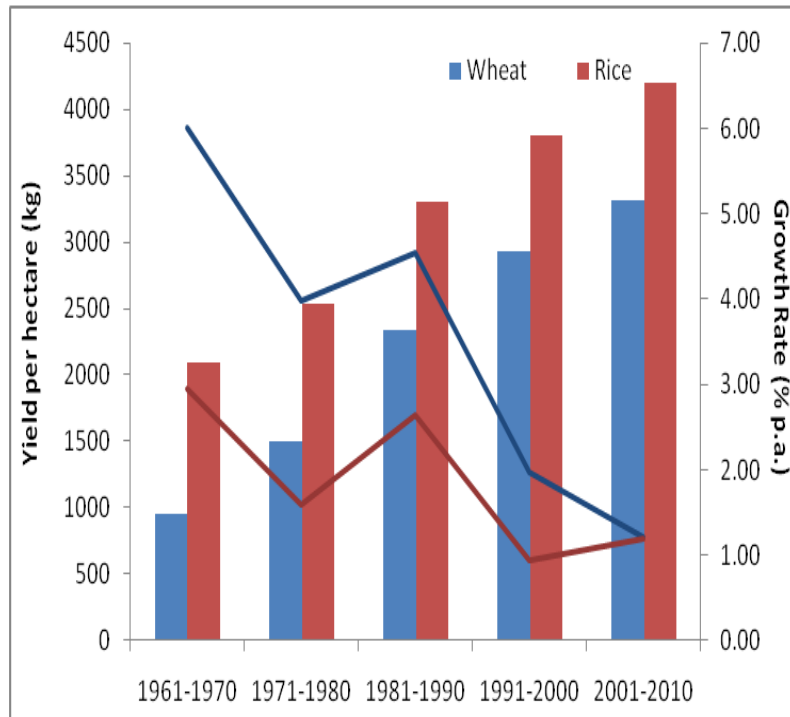
- Can agricultural production and productivity be sustainably increased?
- What are the critical constraints/challenges towards a more sustained agricultural production and productivity growth?
- What are the broad policy options that may help overcome the constraints?
- What are the respective roles of stakeholders in implementing the policy options?

Production Performance of rice and wheat, 1961-2010



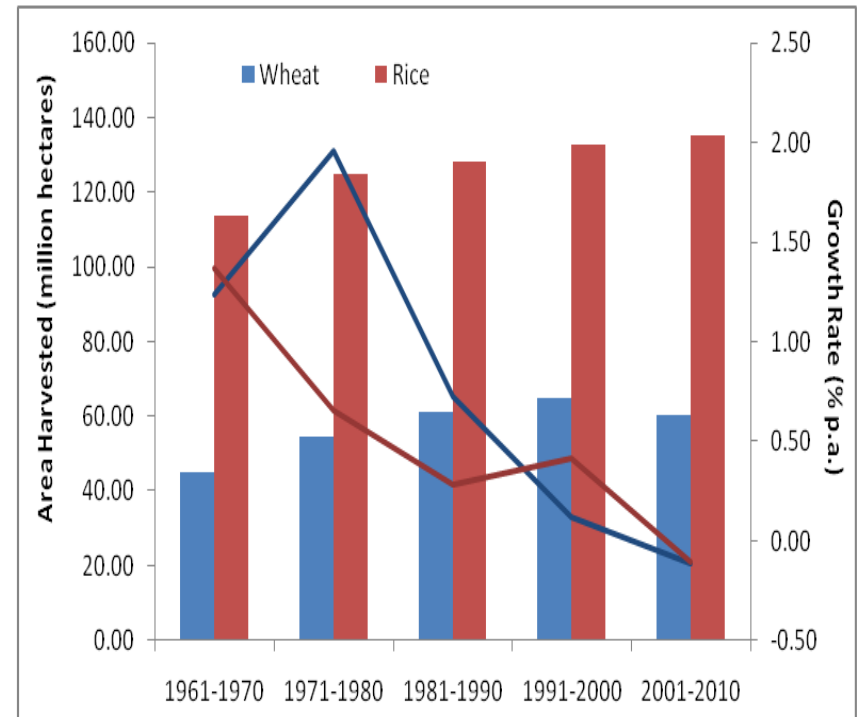
Source: FAOSTAT online, accessed June 2012

Contribution of Area and Yield to growth



Source: FAOSTAT online

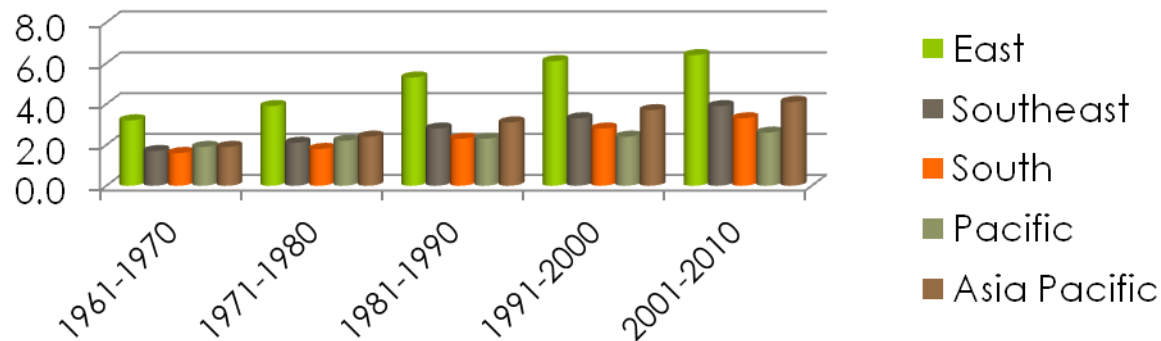
YIELD



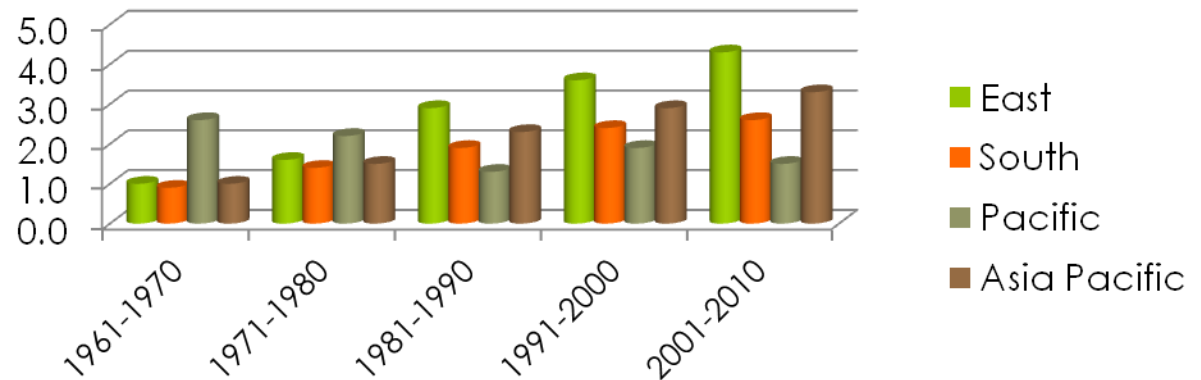
AREA

Sluggish growth in rice and wheat production from the late 1980s is attributed to the drastic decline in yield growth

Sub-regional rice/wheat production trends, yield (tons per ha)



Wheat



Factors influencing yield variability

- Differences in geophysical and climatic characteristics
- Technology use: Input application influencing cropping intensity– ranging from 77% in Myanmar to 199 in Indonesia
 - Rate of adoption of new technologies
 - Development of irrigation
 - Type, rate and timing of fertilizer application
 - Proper application of other appropriate farm practices
 - Continued efforts to develop new seeds and technologies

Factors influencing yield variability

cont'd....

- Labor availability and quality
- Promotion of agricultural mechanization
- Infrastructure and market development-road

Total Factor Productivity in Rice and Wheat

	TFP in RICE Estimate (in %)			
Region	1981-2010	1981-1990	1991-2000	2001-2010
Asia-Pacific	1.40	1.27	0.15	2.70
East Asia	0.20	-1.45	0.96	2.22
South Asia	2.02	0.08	2.42	3.52
Southeast Asia	1.49	-1.48	1.75	3.1

	TFP in Wheat Estimate (in %)			
Region	1981-2010	1981-1990	1991-2000	2001-2010
Asia-Pacific	-0.67	4.94	-0.39	3.15
East Asia	-2.90	4.69	-5.44	4.44
South Asia	-0.03	5.95	6.12	-7.25
Southeast Asia	5.35	-18.35	3.71	7.56

Constraints towards achieving sustainable production

○ Technological

- Exhaustion of the potentials of the Green Revolution technology
- Reinvigorating soil health
- New strains of pests and diseases
- Abiotic stresses made worse with Climate Change

○ Natural resource constraint and climate change

- Soil erosion, waterlogging, salinization, desertification
- Water pollution, excessive water withdrawal
- Competing use of resources

Constraints cont'd...

- Socio-economic
 - Low incomes/low prices
 - Small farm size
 - Tenurial arrangements/rights to land
 - Farmers' education/skills
- Institutional/Infrastructural
 - missing markets for credit and insurance
 - weak extension service to inform
 - Inaccessibility to market to due to poor transport network
 - Poor communication/information
- Market access/Globalization
 - Rice trade is still small
 - Price volatility
 - Trade and taxation policies of countries (subsidies in developed countries, protection/import tariffs in net importing countries, overvalued exchange rates, etc)

Hurdling the constraints: Key Policy Recommendations

- Investment climate has to be substantially improved to generate long term sources of productivity growth and induce greater access to food.
 - R & D to develop new and appropriate technologies
 - Infrastructure (transport, communication, power, etc)
 - Strengthened extension service
 - Tools to enhance info and knowledge dissemination
 - Human resource capacity improvement

Hurdling

cont,d...

- Reorienting food-security policy toward facilitating—not inhibiting—trade, competition,
 - Effective regulations or control mechanisms on input and output markets
 - Removal of barriers to market access and out in place appropriate trade regulations to strengthen/ enhance competitive stance in regional and international trade
 - Development of appropriate smallholder schemes (e.g. contract farming)

Hurdling cont'd....

- Strengthen institutions/Promoting institutional innovations
 - Empower farmers: land titles, strengthening farmer's organizations/coops, enhancing capacities and skills
 - Innovative platform to involve farmers in technology development
 - Public/private partnership: research and extension, development of non-farm employment opportunities—to work together and not compete
 - Innovative ways to achieve security of tenure particularly on land
 - Credit/Financial services: availability and access
 - Social security system

Role of Various Stakeholders

- The sustainability agenda should be coherent with national strategies for agriculture and rural development. To develop and implement these will need to draw strength from all stakeholders
- Increasing alliance between public and private sector where each would work in areas of their comparative advantage but with the welfare of smallholder farmers in mind
- Countries themselves have to play the big brother to small brother role
- Continued investment support from development partners and donor communities



THANK YOU