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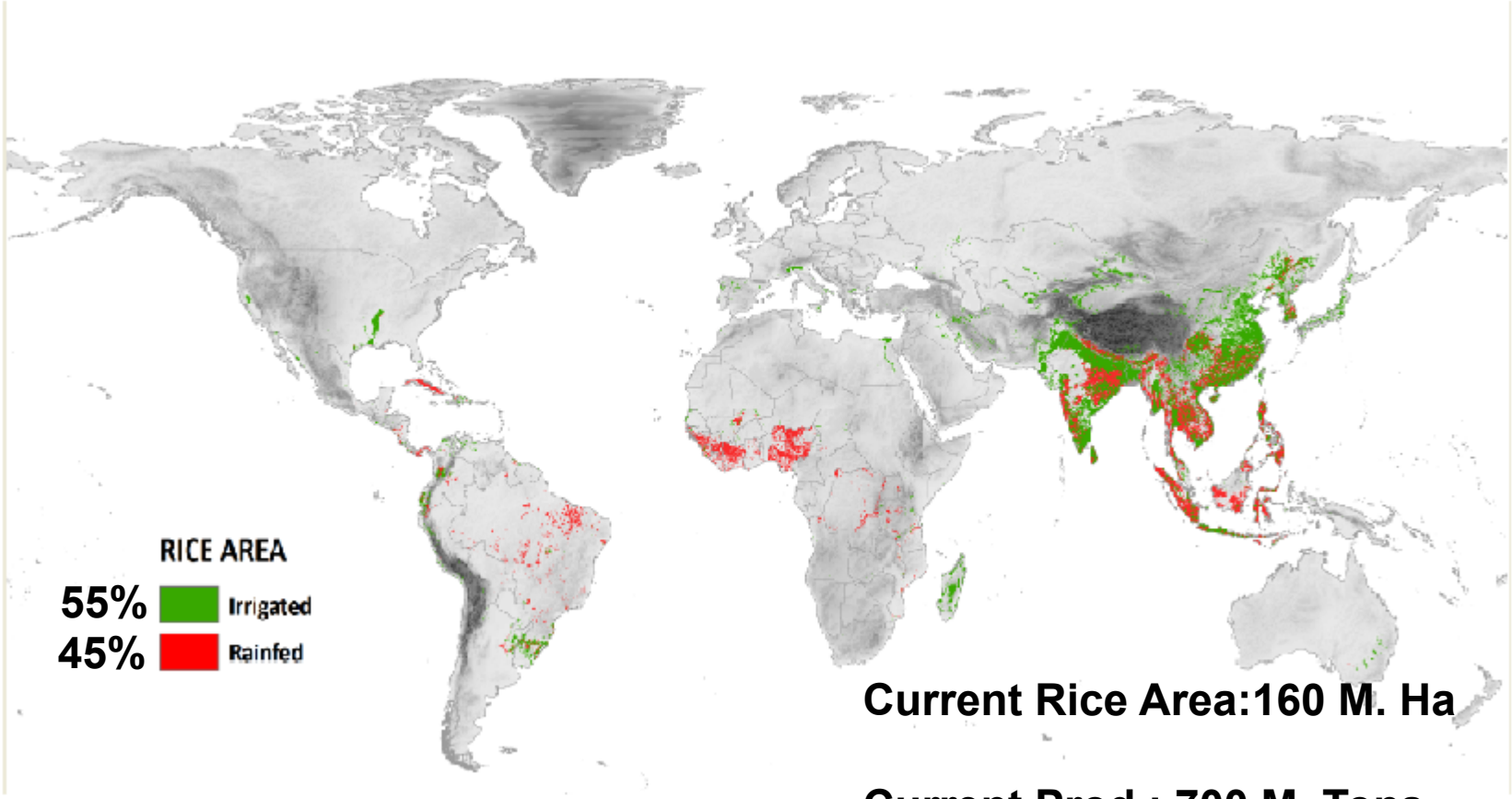
INTERNATIONAL RICE RESEARCH INSTITUTE

The role of government in improved risk management

Rice Science for a Better World

Rice Facts



Current Rice Area:160 M. Ha

Current Prod.: 700 M. Tons

More than 200 million small rice farmers

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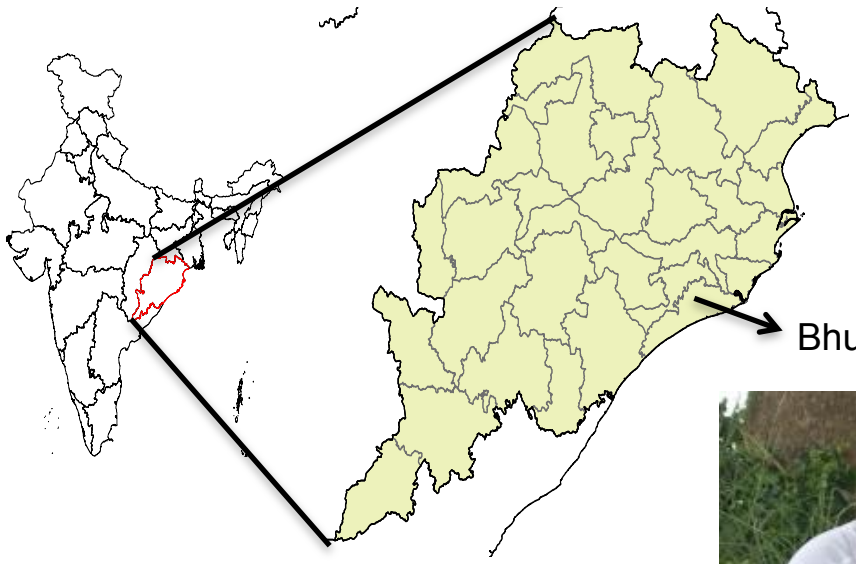
A day in the life of an Odisha rice farmer



- 30 years farming
- 0.7 ha (two patches) = 0.4 ha shared
- rice, gram, mushrooms, potato, gourd
- 1 cow, 2 calves, 1 bullock
- >90 d laborer for others

Samarendu Mohanty with Gagan and other farmers

S. Mohanty & S. Baruah
Rice Today, Sep. 2012

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Total gross income from selling surplus produce: US$ 1100 per year

Gagan working on his irrigated patch

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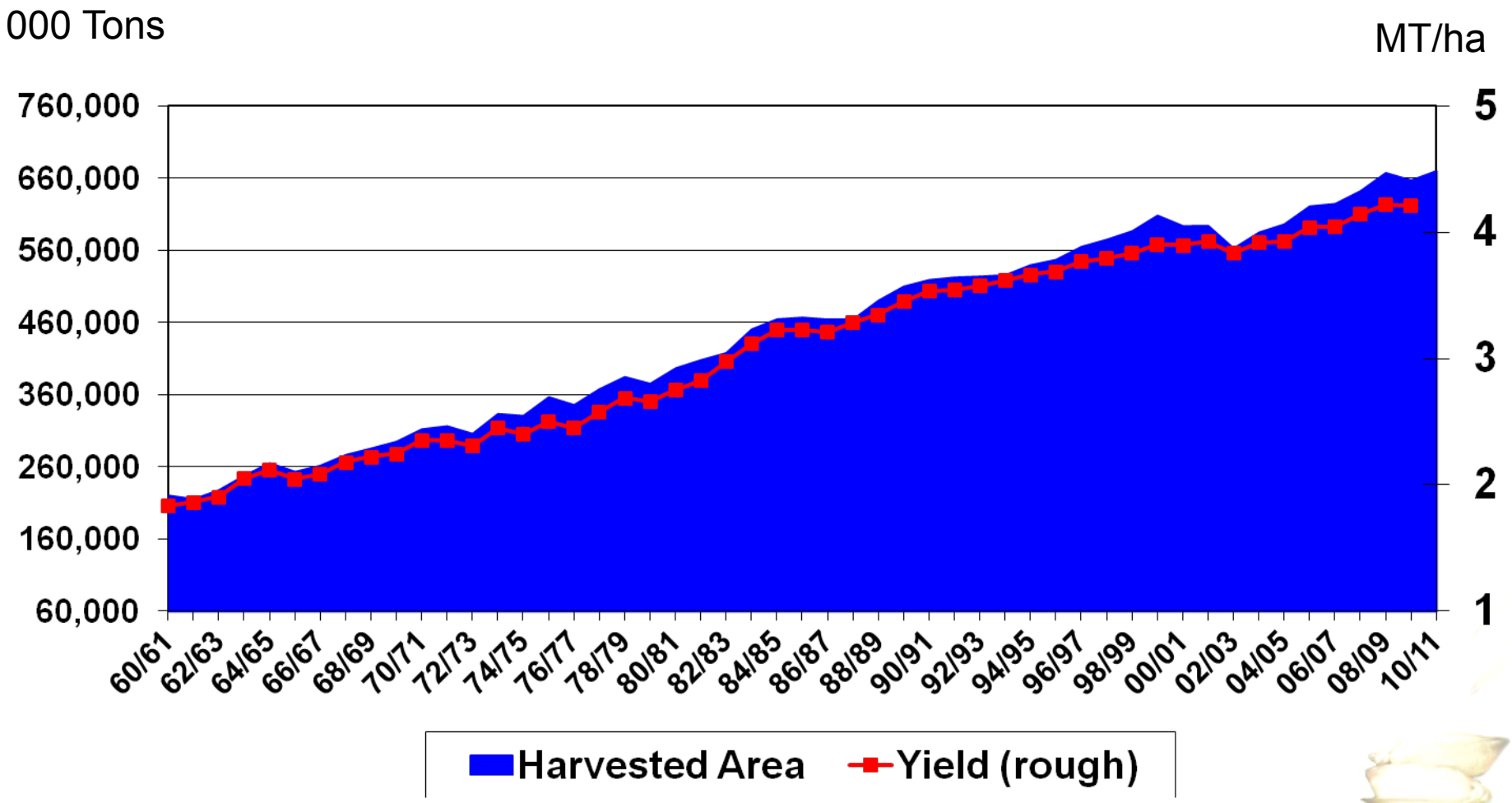
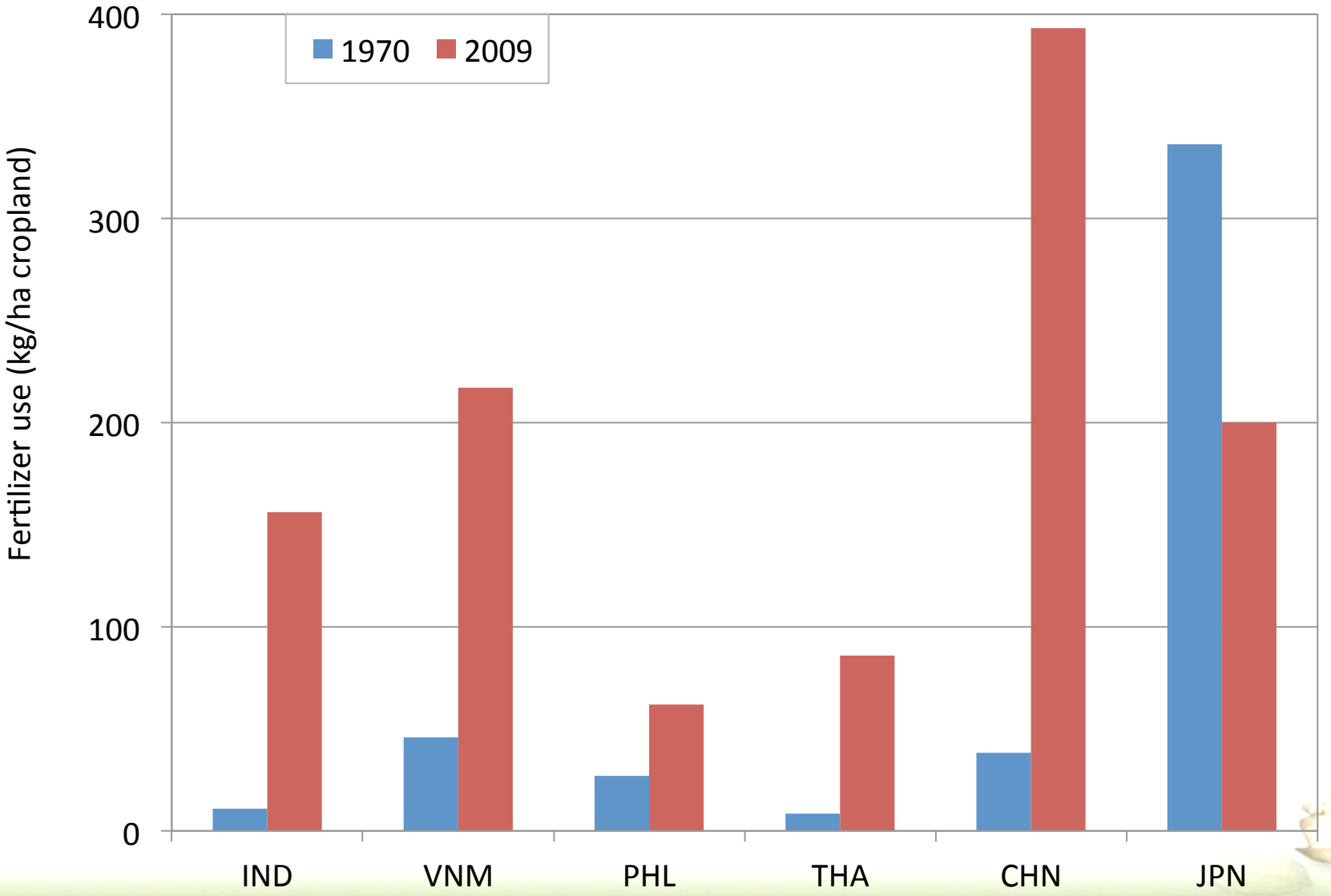
World Paddy Production and Yield



PSD, USDA 2011

Fertilizer (NPK) use in agriculture, 1970-2009



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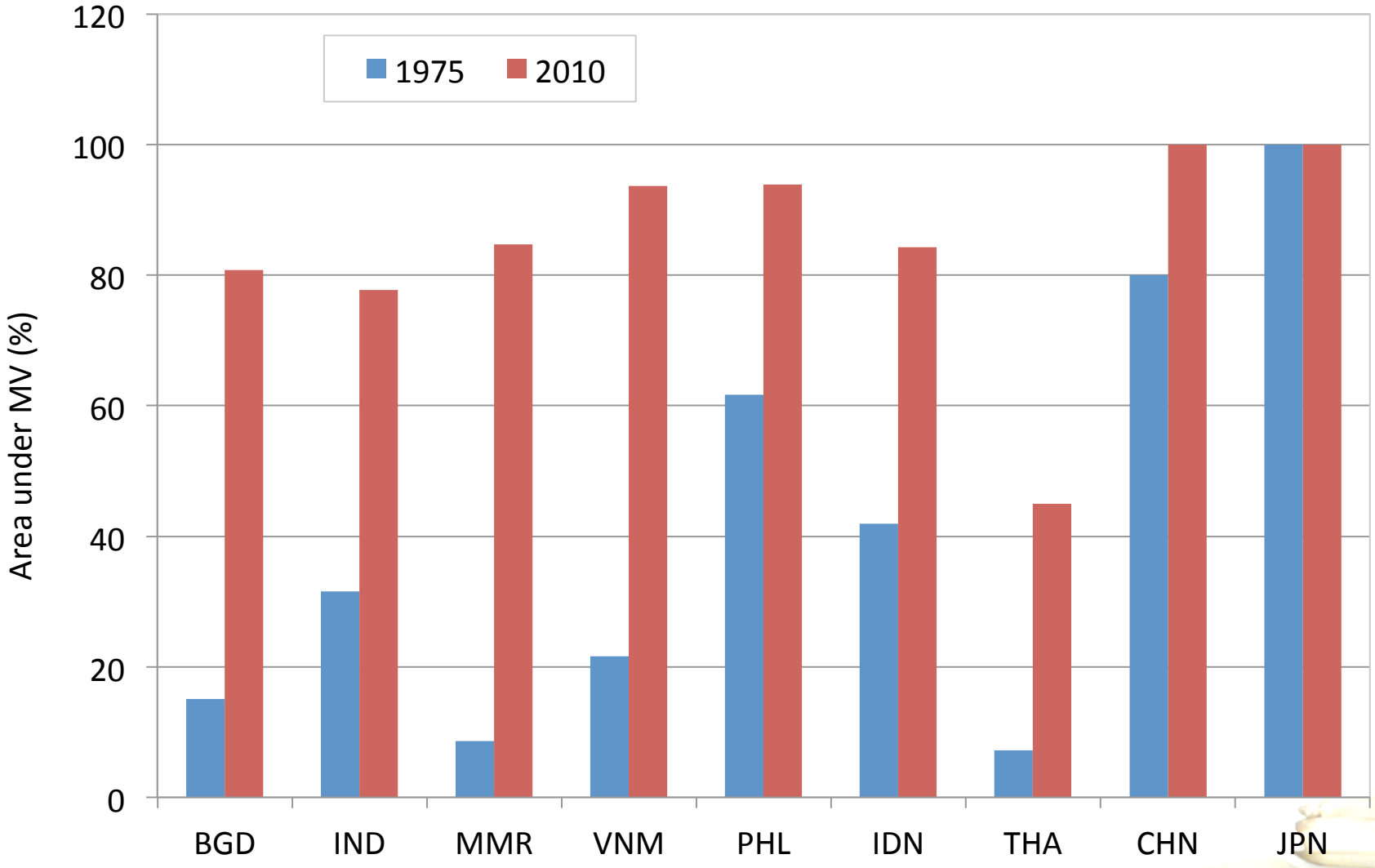
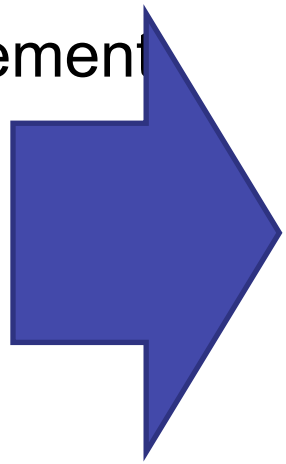
Adoption of MVs of rice in Asia, 1975-2010



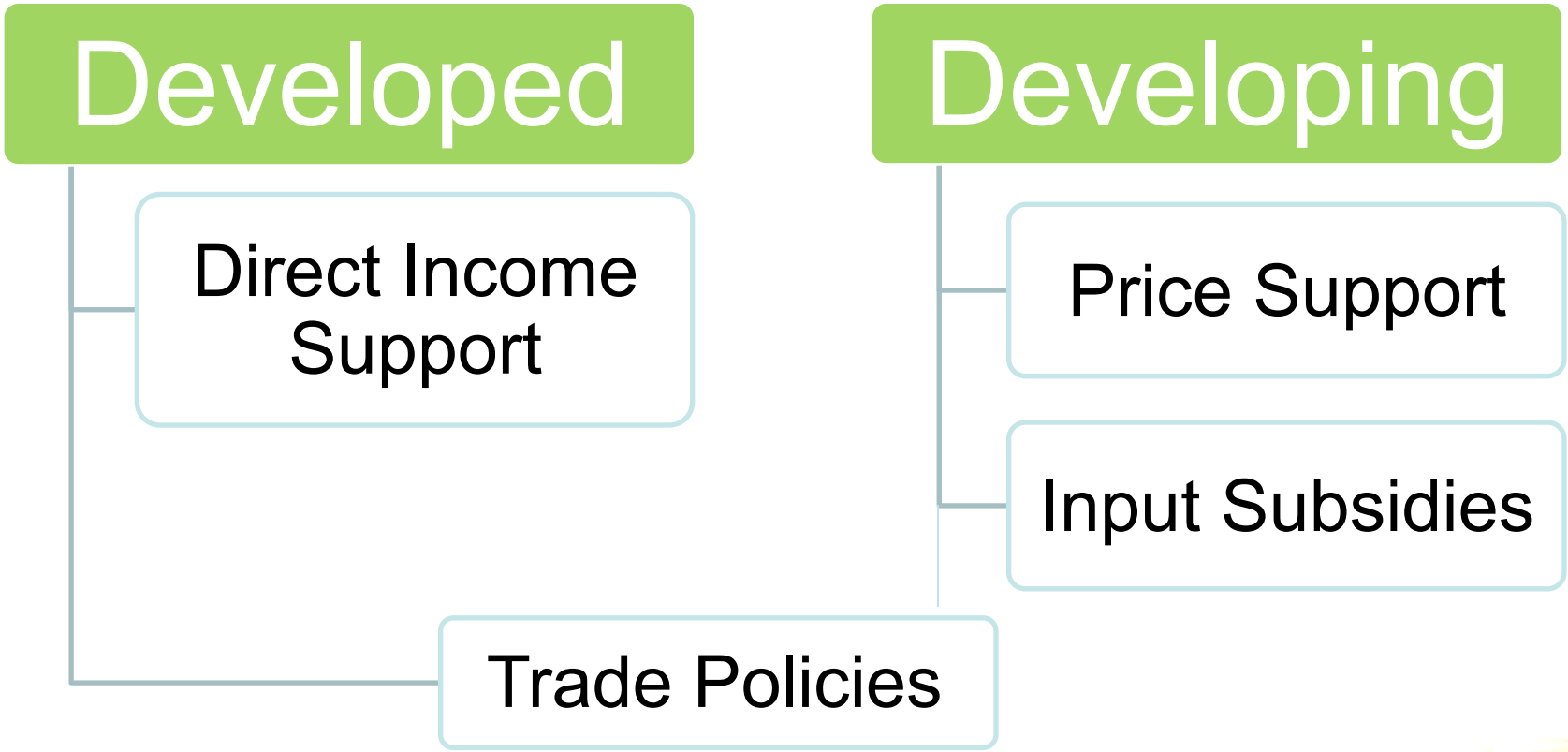
Government Interventions in Rice Sector

- Domestic programs
  - Price support
  - Input Subsidies
  - Government Procurement
  - Direct Payment
- Trade Policies
  - State trading
  - Export quota
  - Import quota
  - Export ban
  - Minimum access commitment



- Achieve self sufficiency/ Food security
  - 1970-1990: Self sufficiency
  - 1990-2007: Food security
  - 2007-present: Self sufficiency
- Raise farm income
- Reduce price instability

Forms of Interventions: Developed vs Developing



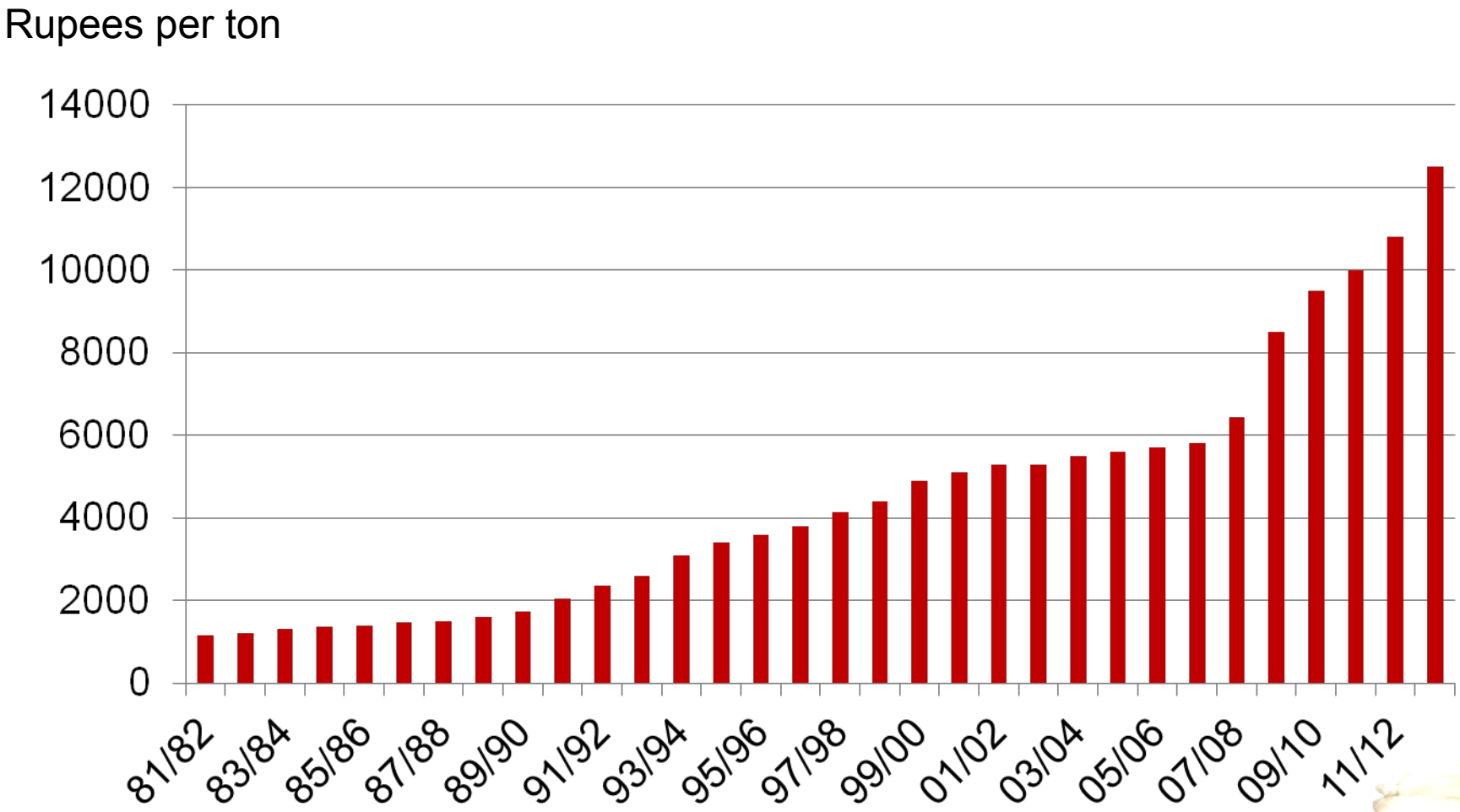
Rice Sector Policy in India

Table 2. Rice sector policies in India, 2011.

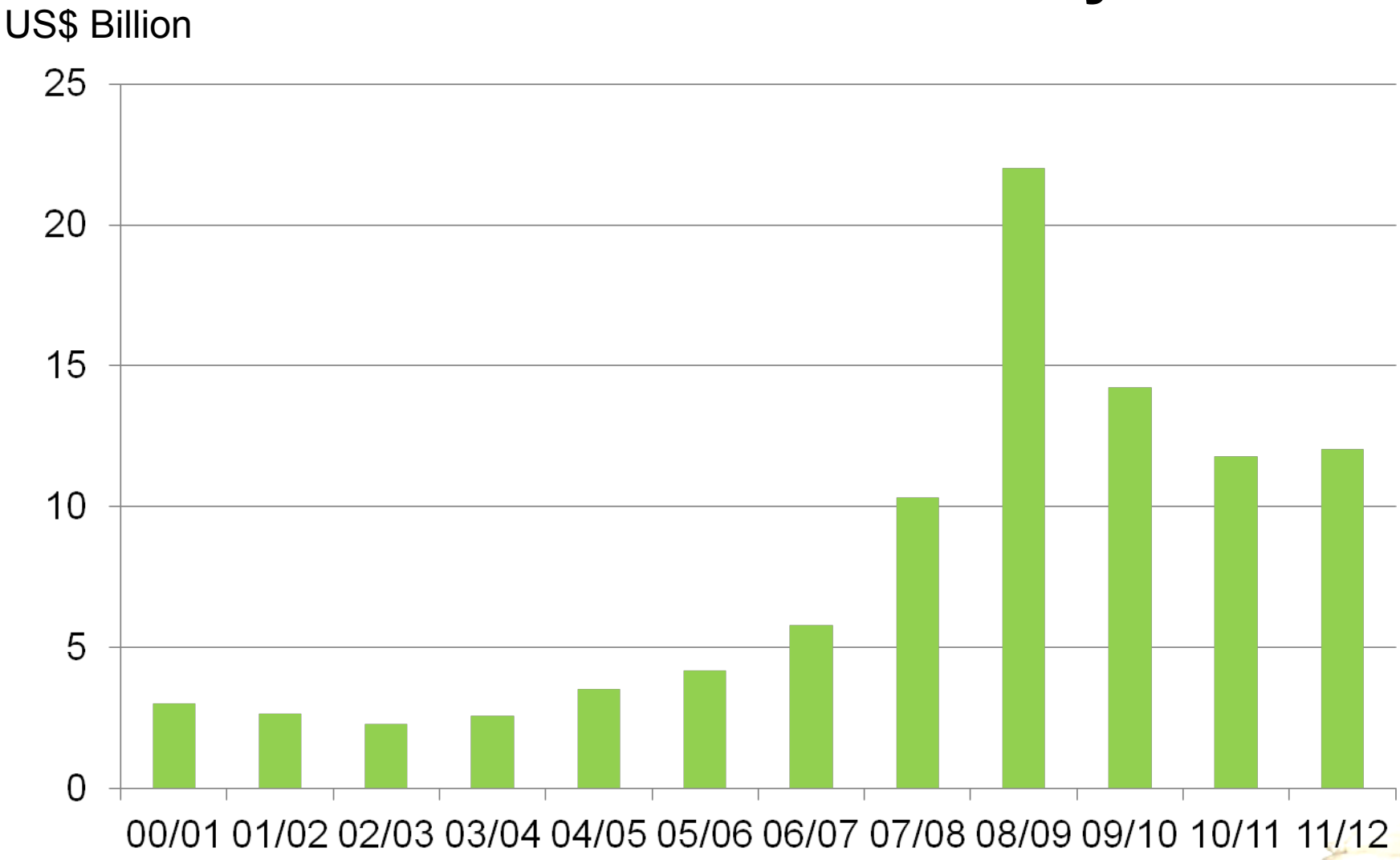
Policy	Description
Stock policy	
Public stocks	One million metric tons of rice approved to be sold through open market operations.
Production policy	
Minimum support price	The minimum support price of common paddy is $0.21 per kilogram; for grade A paddy, $0.22 per kilogram.
Irrigation and Electricity subsidy	Irrigation and electricity are supplied directly to farmers at prices below production costs. Consumption is unmetered for many agricultural users and is based on the horsepower rating of the water pump.
Machinery subsidy	A 50% subsidy for pump sets, seed drills, rotavators, knapsack sprayers, and power weeders. Power tillers are distributed at a 25% subsidy, subject to a maximum of INR 45,000, and rice transplanters are distributed at a 50% subsidy.
Fertilizer subsidy	Also called NBS. This subsidy was implemented to give farmers incentives to use a better mix of nutrients and is based on the scheme that fixes a subsidy on nutrients nitrogen (N), phosphorus (P), potassium (K), and sulfur (S) contents.
Seed subsidy	Production of hybrid rice seed amounting to a subsidy of INR 2,000 per quintal or 50% of the cost.
Consumer policy	
Food subsidy for rice price increase	Under the TPDS scheme, BPL families are eligible of 35 kilograms rice subsidy every month at $0.04 per kilogram; for APL families 15 kg. of rice subsidy every month are allotted at $0.18 per kilogram; AAY category card holders are eligible of 35 kilograms of rice subsidy every month at $0.09 per kilogram.
Export policy	
State trading	Rice is sold to importing countries through state-to-state agencies.
Minimum export price	The MEPs are: $900–1,200 per ton for basmati rice; $400 per ton for nonbasmati rice; $370-380 per ton for 25% broken rice; $600 per ton for Sona Masuri, Ponni Samba, and Matta rice varieties.

Source: Handbook on Rice Policy for Asia by Annette, Molina and others

Indian Paddy MSP (Common Varieties)



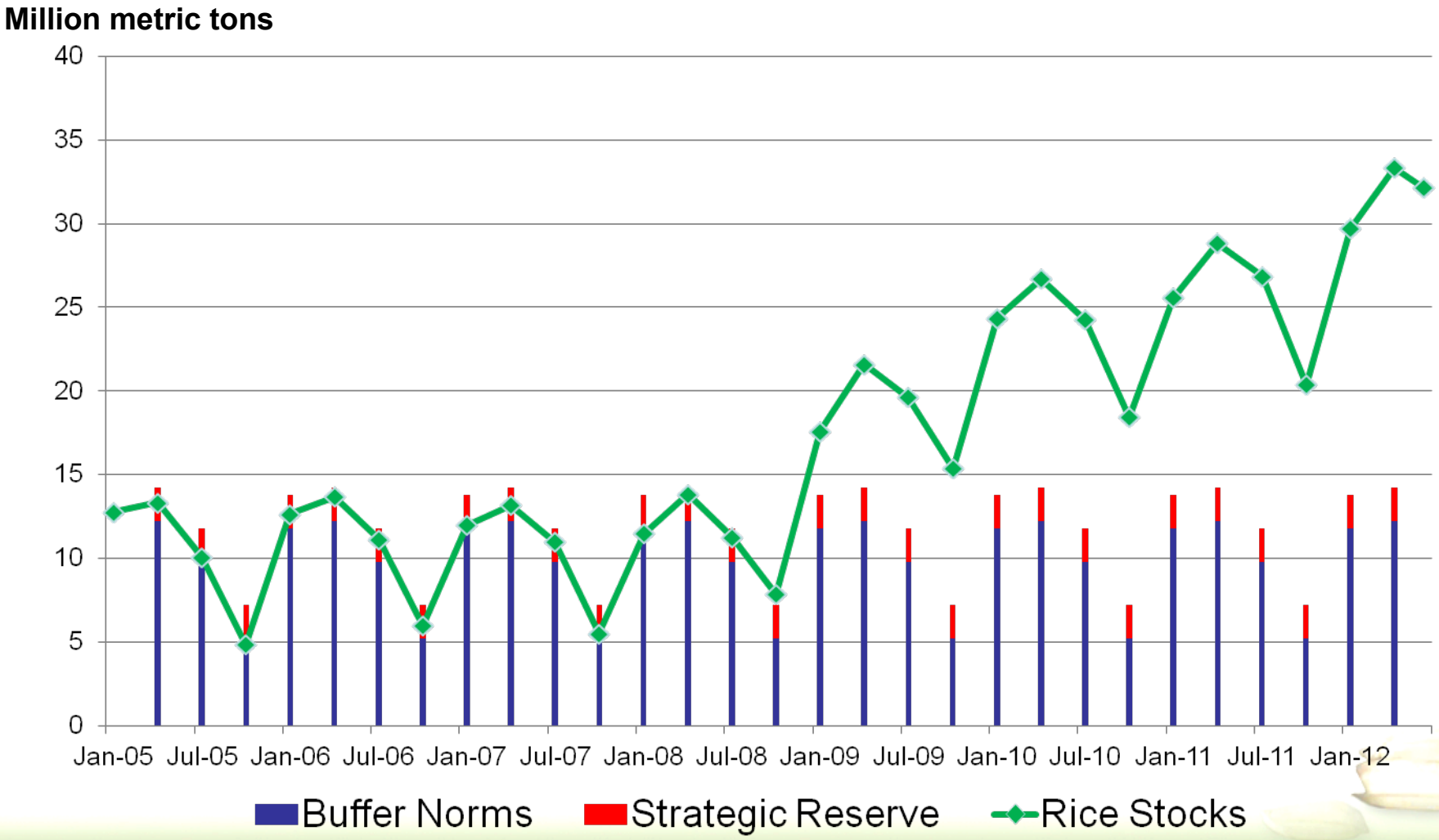
Indian Fertilizer Subsidy



From various sources

Indian Rice procurement stocks

actual vs (buffer + strategic reserve)



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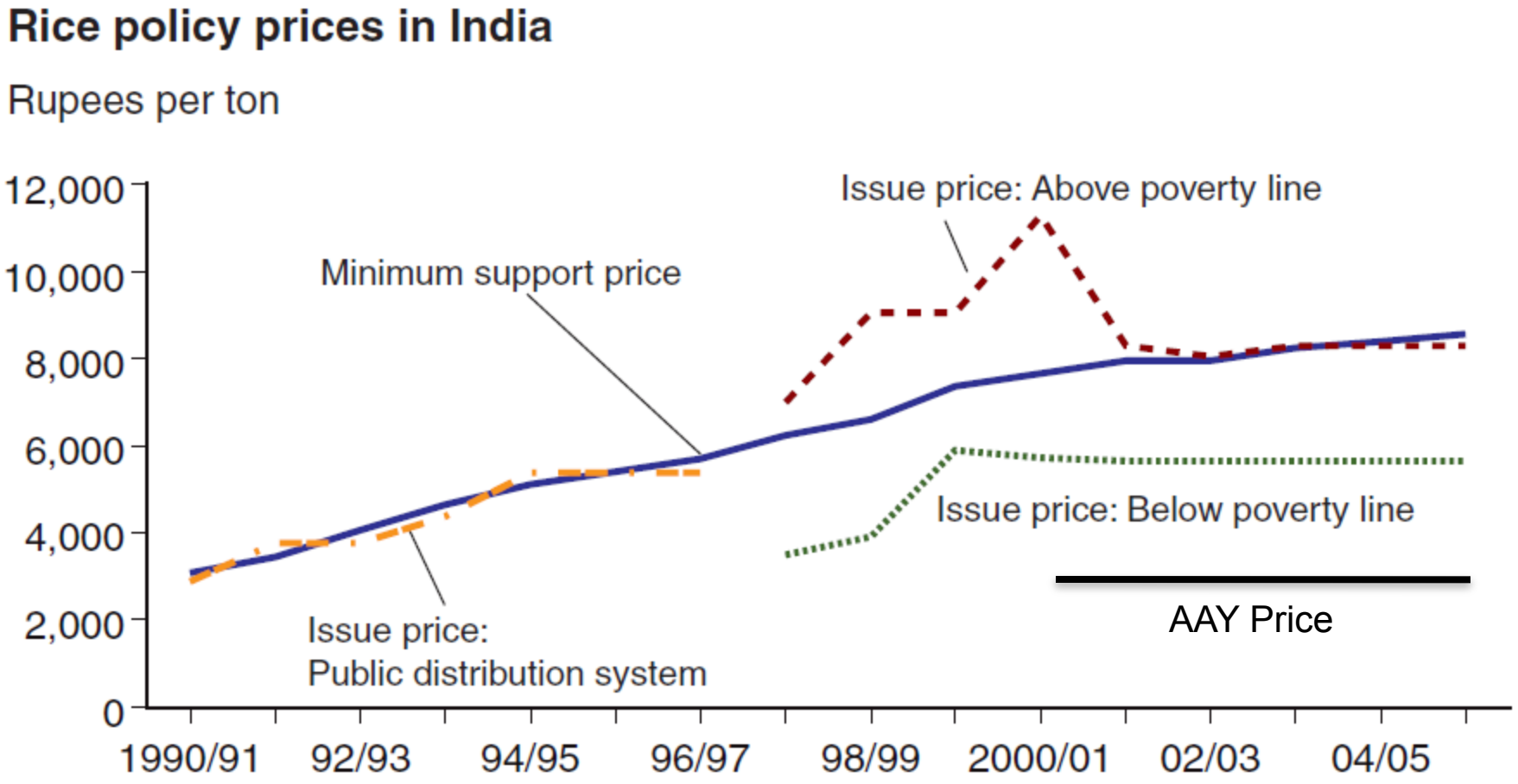
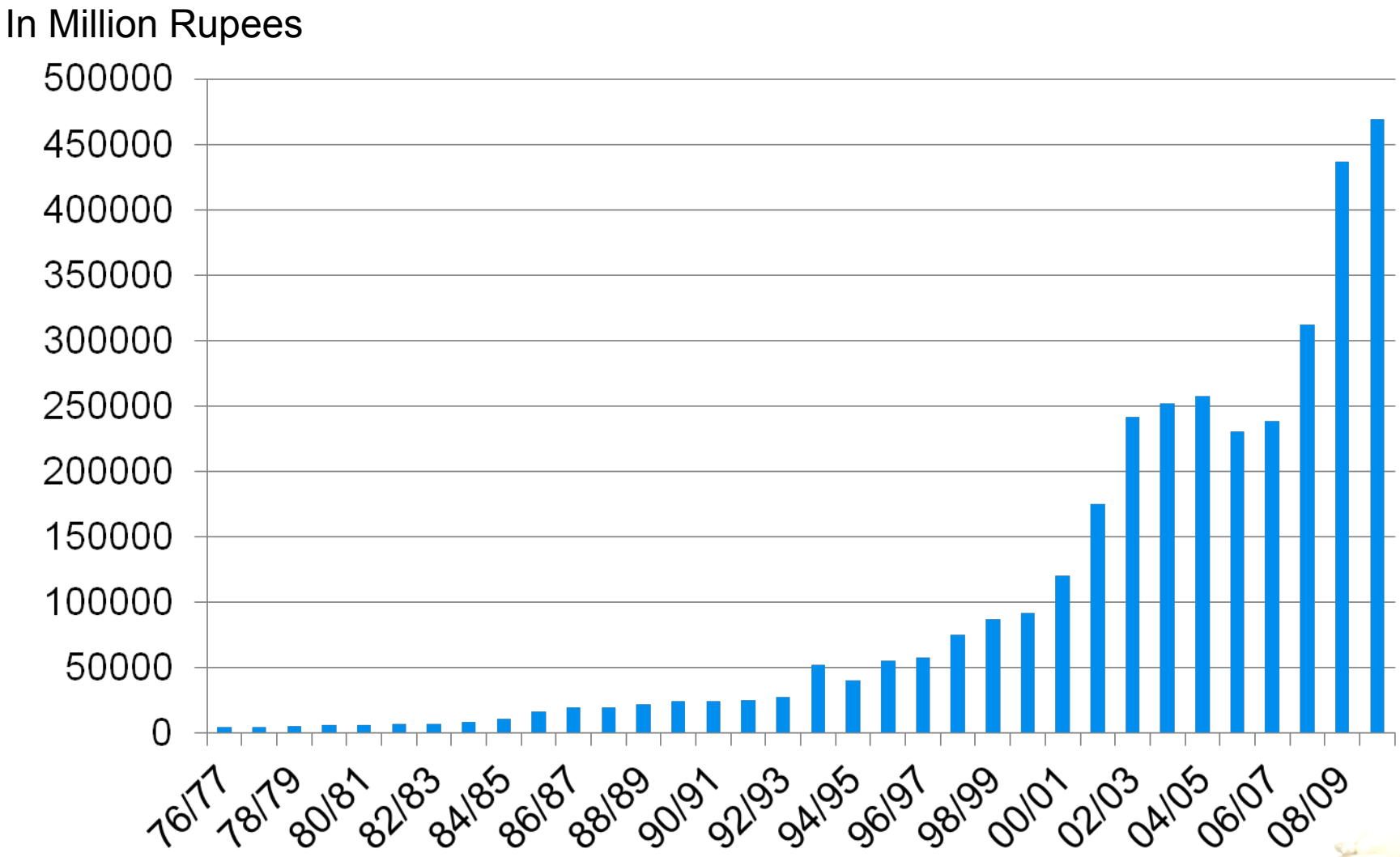
Data Source: Food Corporation of India

Rice Policy Prices in India



Source: **Indian Wheat and Rice Sector Policies and the Implications of Reform, ERS, USDA**

Indian Food Subsidy



Source: INDIASTAT

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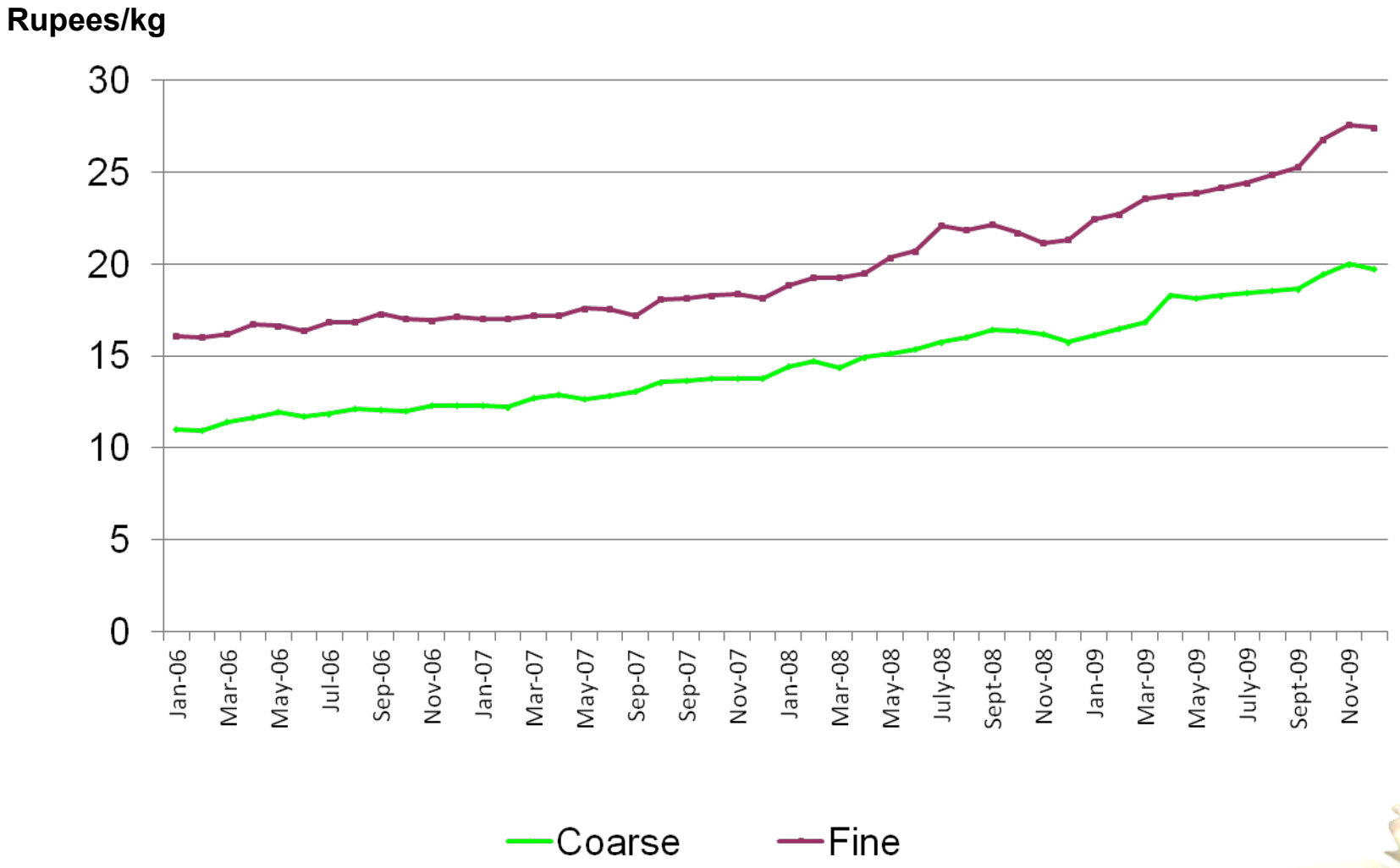
Indian Rice Retail Prices



*Average for major Indian markets
Data Source: Indian Ministry of Agriculture and Cooperation

Chinese non-Price Government Support Program

Non-price government support programmes, 2005-2008 *(billions)*					
	Direct payment	Seed subsidy	Machinery subsidy	Fuel/fertilizer subsidy	Total
2005					
CNY	13.2	3.9	0.3	0	17.4
(USD)	(1.7)	(0.5)	(0.0)	(0)	(2.3)
2006					
CNY	14.2	4.1	0.6	12.5	31.4
(USD)	(1.9)	(0.5)	(0.1)	(1.7)	(4.1)
2007					
CNY	15.1	6.7	2.0	27.6	51.4
(USD)	(2.1)	(0.9)	(0.3)	(3.7)	(6.8)
2008					
CNY	15.1	12.1	4.0	63.8	102.9
(USD)	(2.2)	(1.8)	(0.6)	(10.3)	(14.8)
Sources: MOA of China, USDA/FAS and FAO estimates.					

Source: http://www.fao.org/docrep/012/ak340e/ak340e06b.htm

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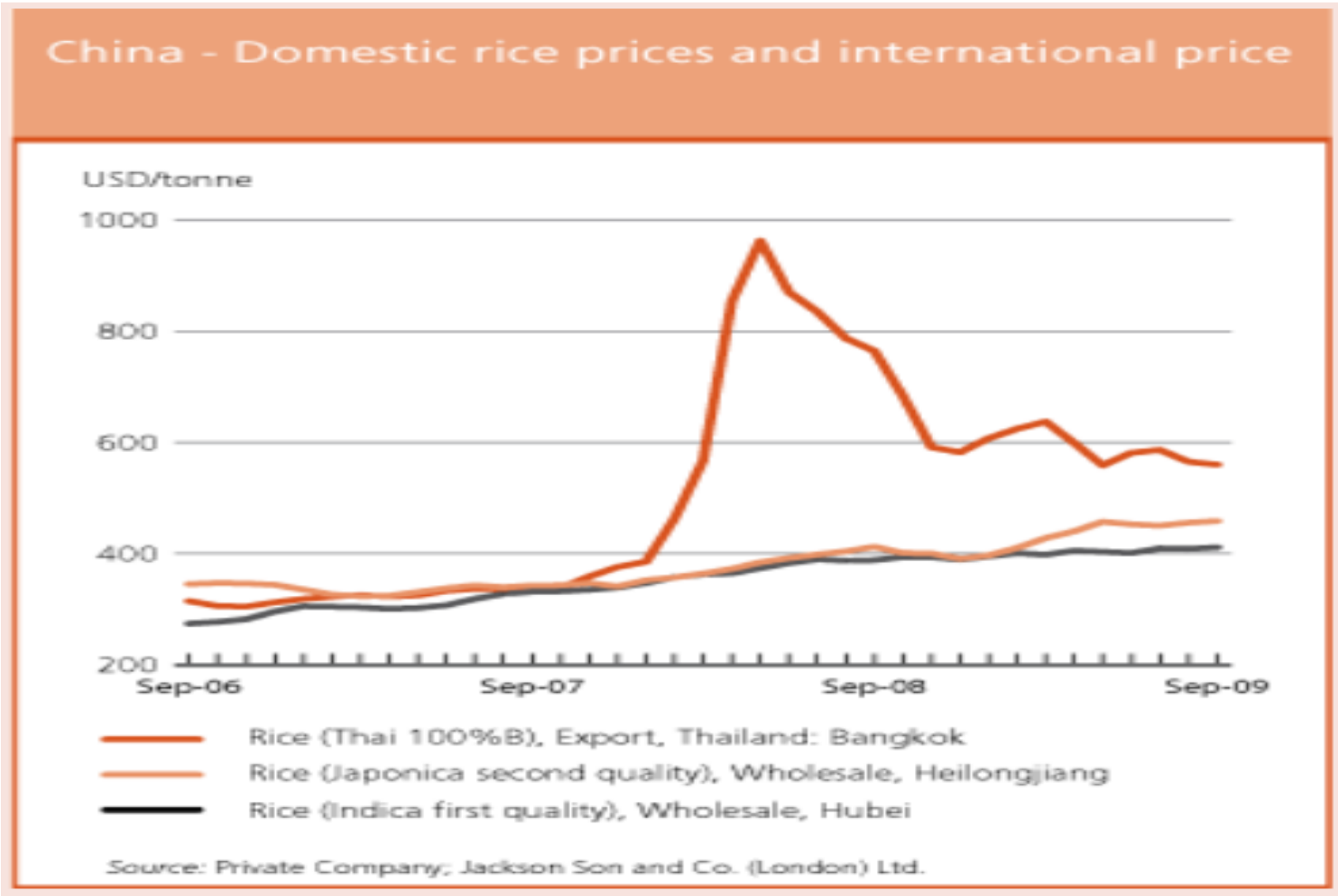
China: Domestic Rice Prices and International Price



Source: http://www.fao.org/docrep/012/ak340e/ak340e06b.htm

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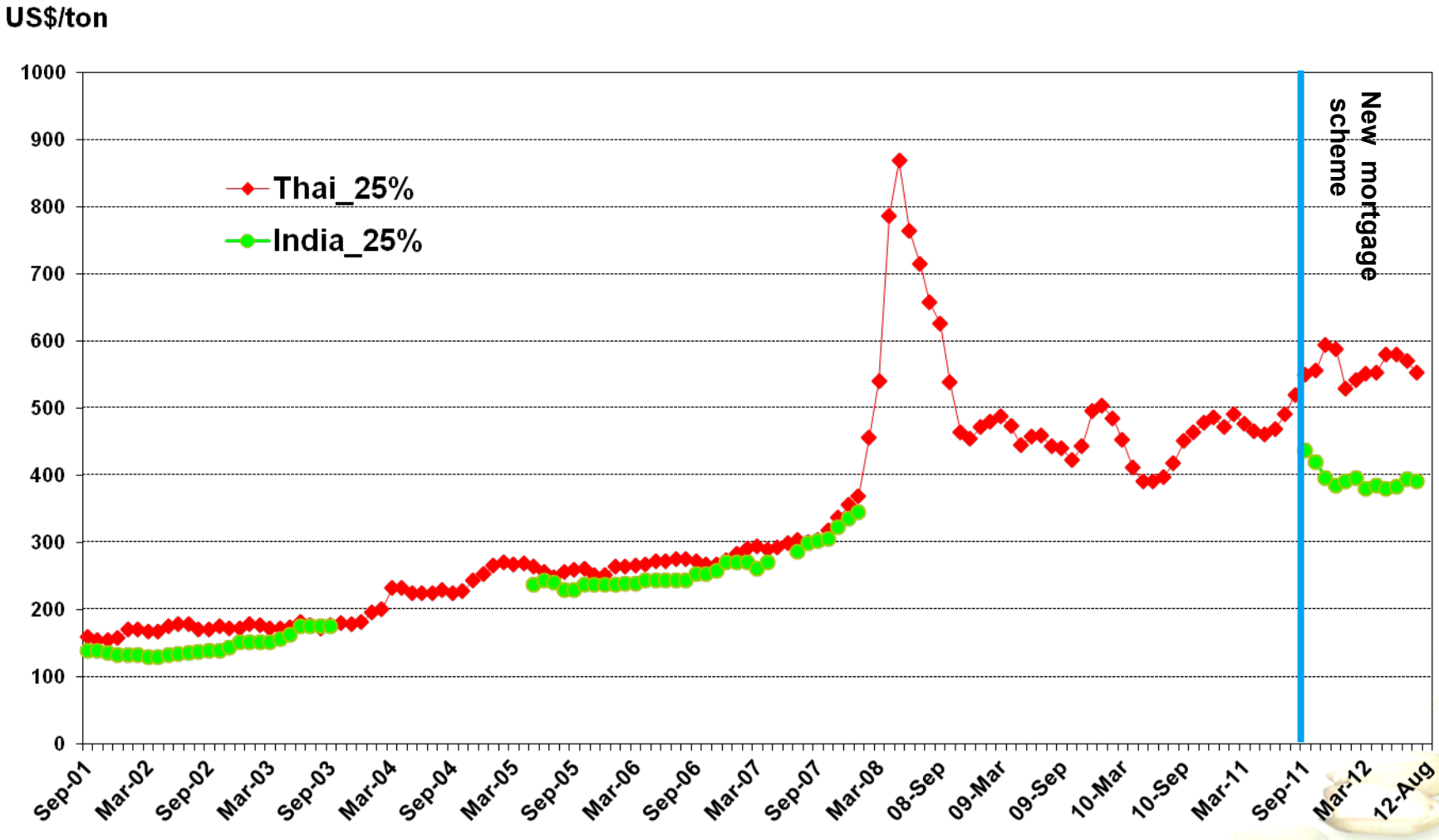
Rice Sector Policy in Indonesia (2011)

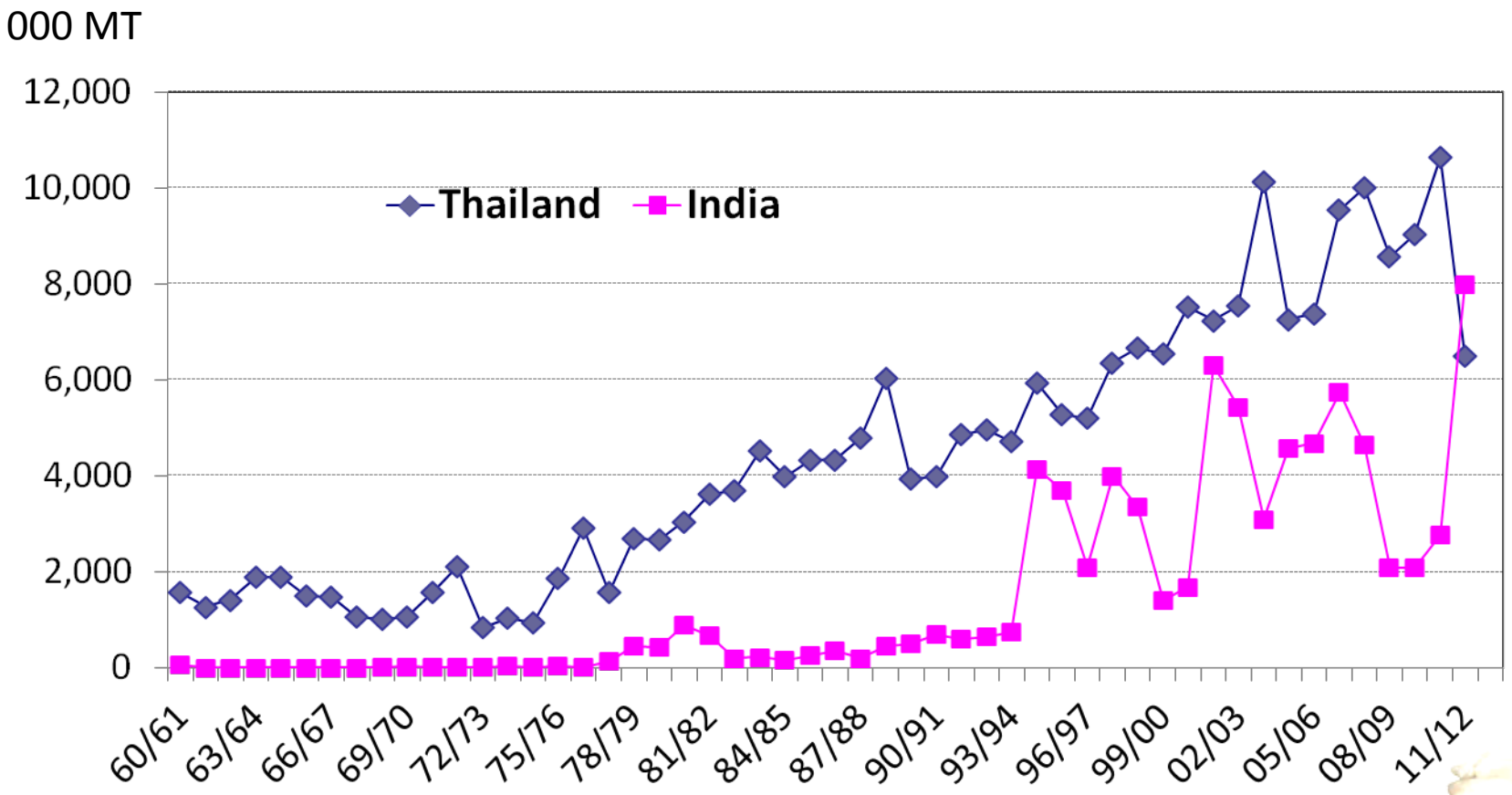
Policy	Description of policy
Production policy	
Fertilizer subsidy	Farmers managing less than 0.5 ha of land receive only 40% of the subsidy. The total amount of organic fertilizer subsidy allocation is 835,000 tons (IDR 584,500 million).
Price support	$0.59 per kilogram for rice; $0.39 per kilogram for dry paddy.
Food subsidy for rice price increase	Bulog sells subsidized rice to poor families at $0.177 per kilogram. The market price for medium rice is $0.813 per kilogram.
Import policy	
State trading	Bulog purchases grain for price stabilization, delivers rice to the poor via the Raskin program, and manages food stocks.
Tariff	The import duty on rice is $50 per ton.

Pledging Scheme Pricing Thai Rice Out of the Market, 2001-2012



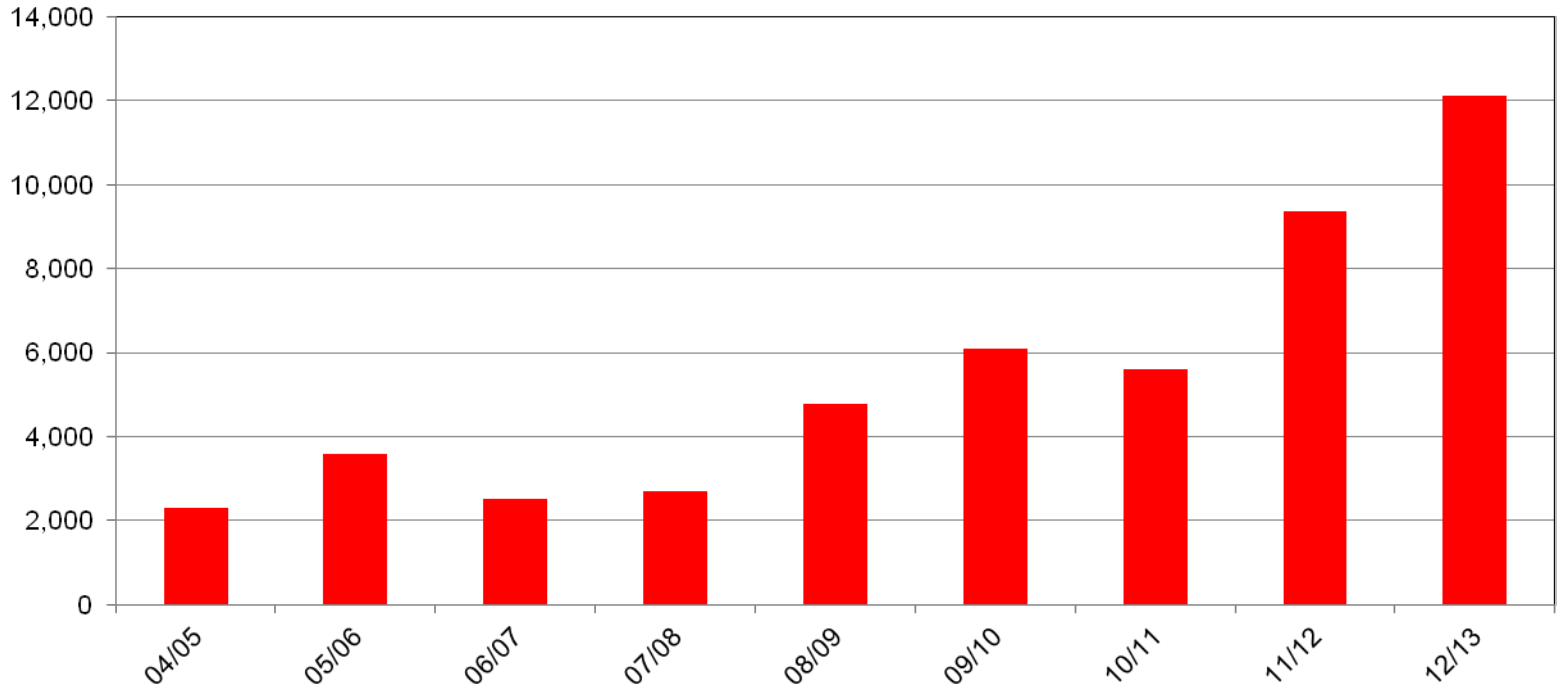
Data Source: FAO Rice Monitor

Consequences of Thai Mortgage Program



Thai Rice Inventory

000 MT



Data Source: USDA

Paddy Support Price in Major Asian Countries

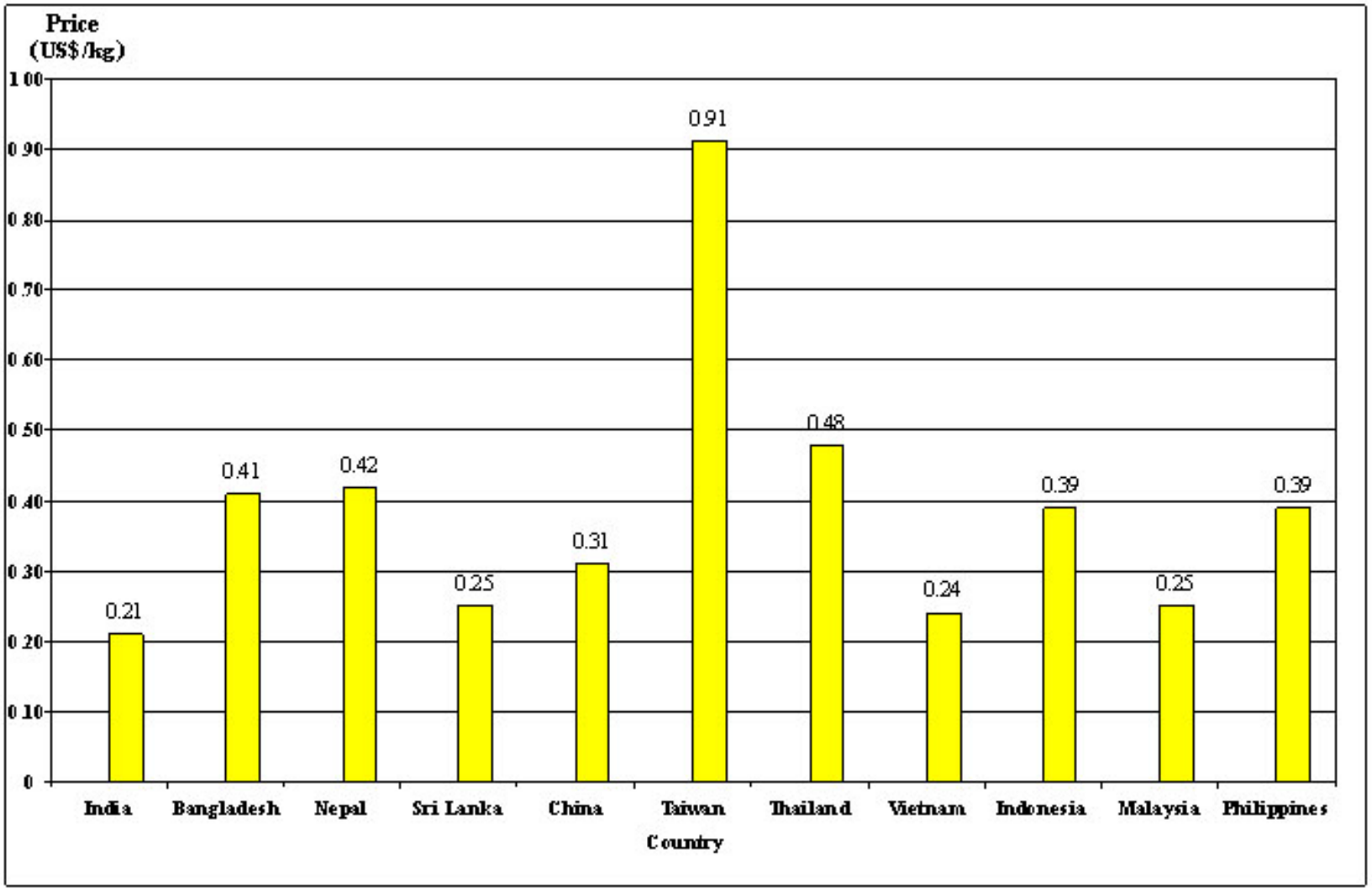


Table 4 Rice policy comparison for four Asian countries

	Japan	Korea	Taiwan	China
Fixed payment	V	V		
Variable payment	V	V		
Government purchase at guaranteed price			V	V
Food security stock-holding at market price	V	V		
Diversion payment	V		V	
Set-aside payment			V	
Tariff Rate Quota (TRQ)	V		V	V
Minimum Access (MA)		V		

Source: Authors' assessment.

Source: Asian Rice Policies and WTO Commitments on Domestic Support Under Existing and Proposed Doha Round Provisions
Min-Hsien Yang and David Blandford, 2011

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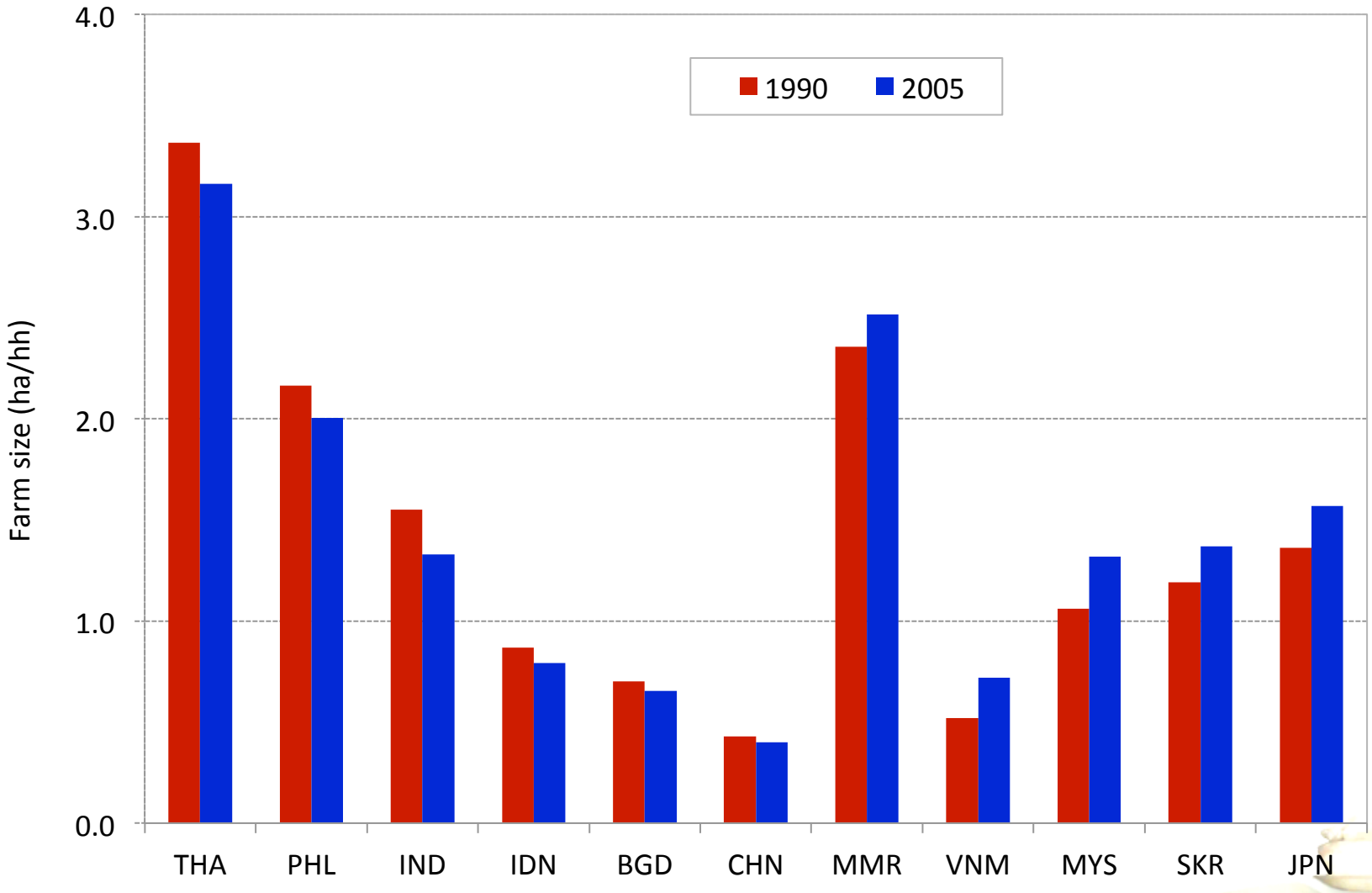
Sources of Risk in Rice Farming

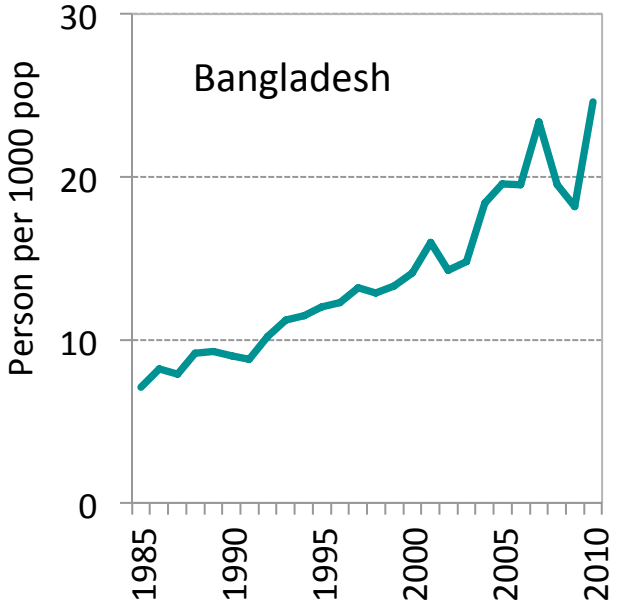
- Production Risk
  - Weather: Submergence, drought (or both in the same season), typhoon.
  - Pest and Diseases
- Market Risk
  - Output price
  - Input price: Fertilizer, fuel, electricity, etc.

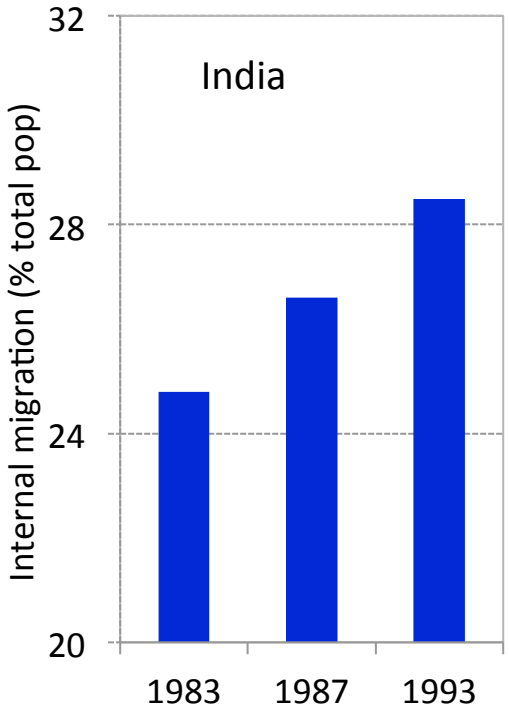
Going Forward

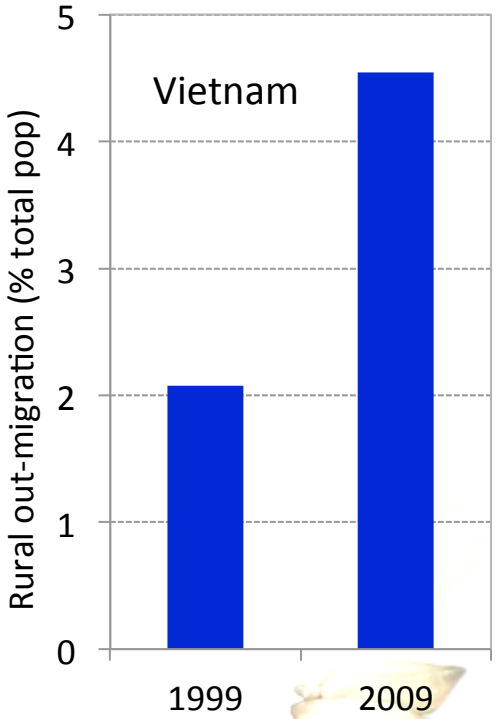
Trends in farm size in Asia, 1990-2005



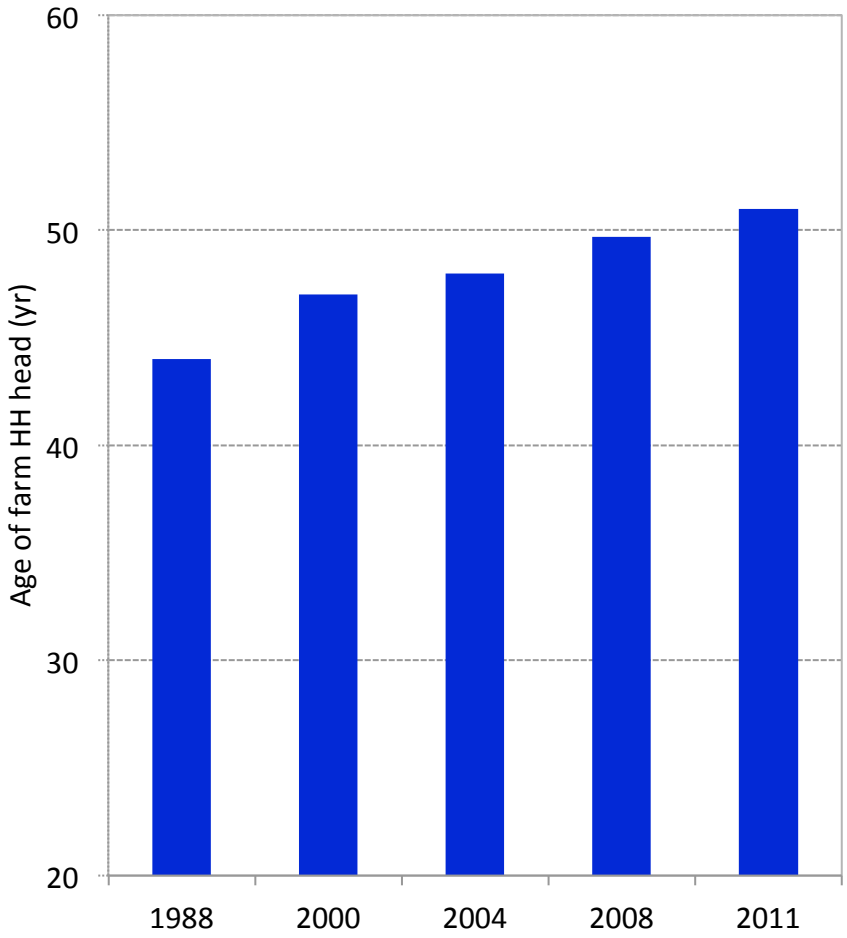
Rural out-migration in Asia



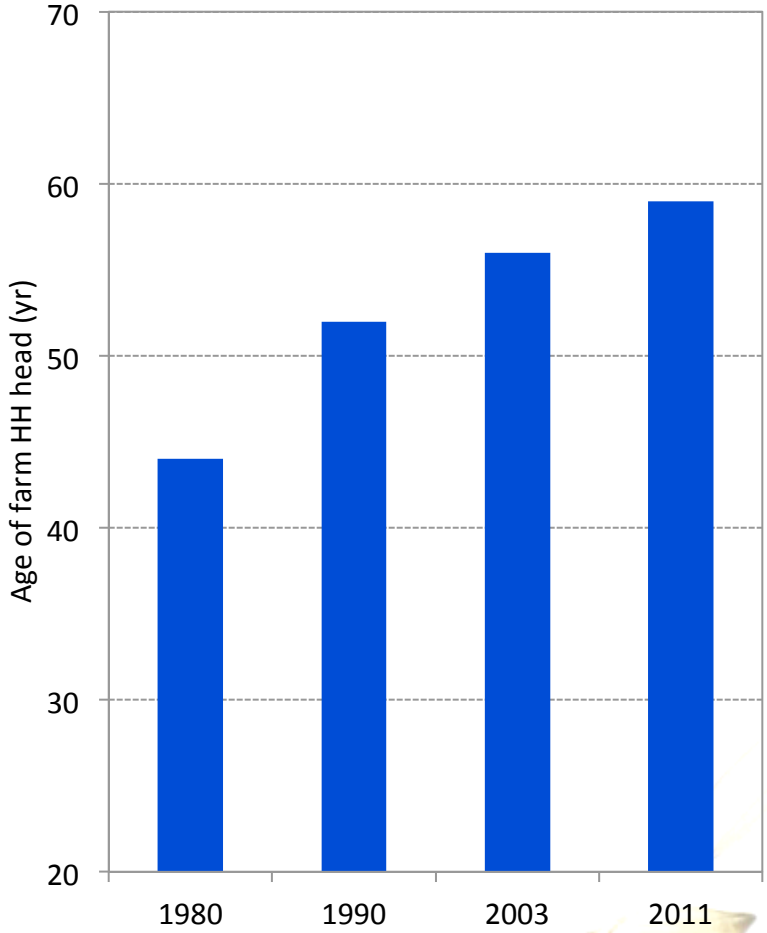




Age of farm household head in Asia



Bangladesh



Philippines

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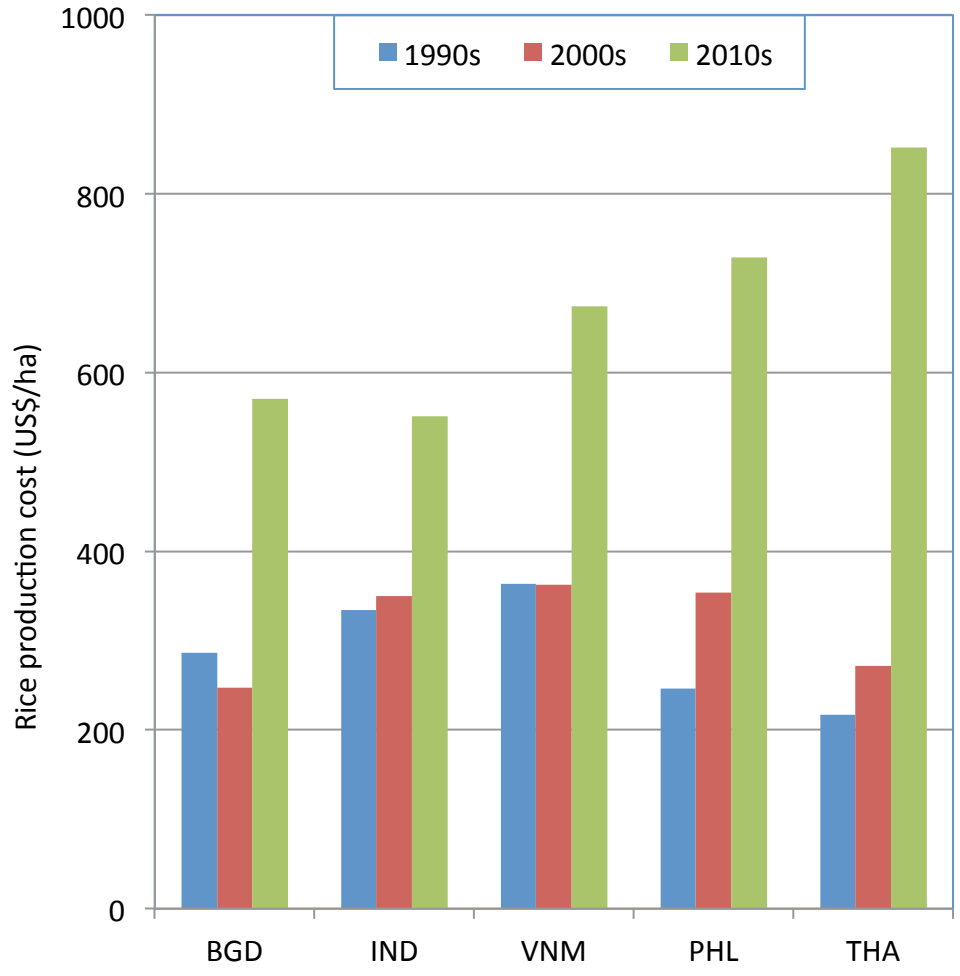
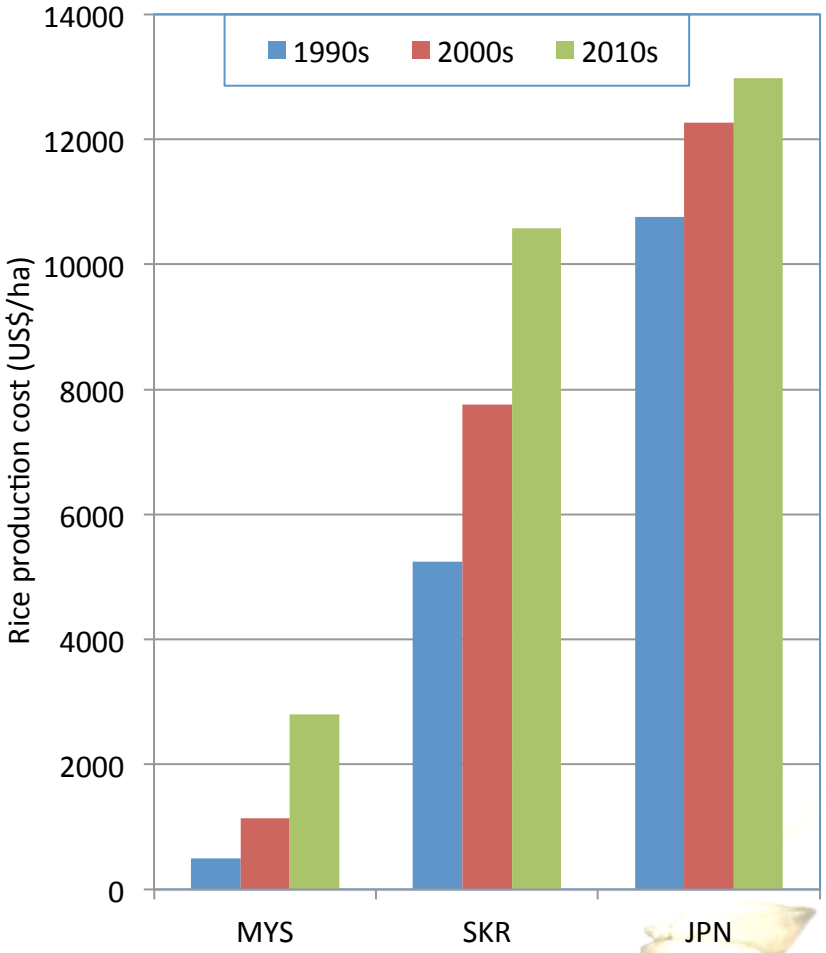
Rice production cost in Asia



Developing Asia



Developed Asia

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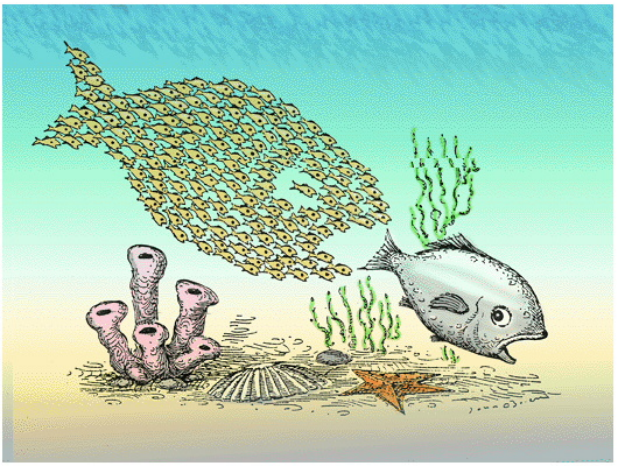
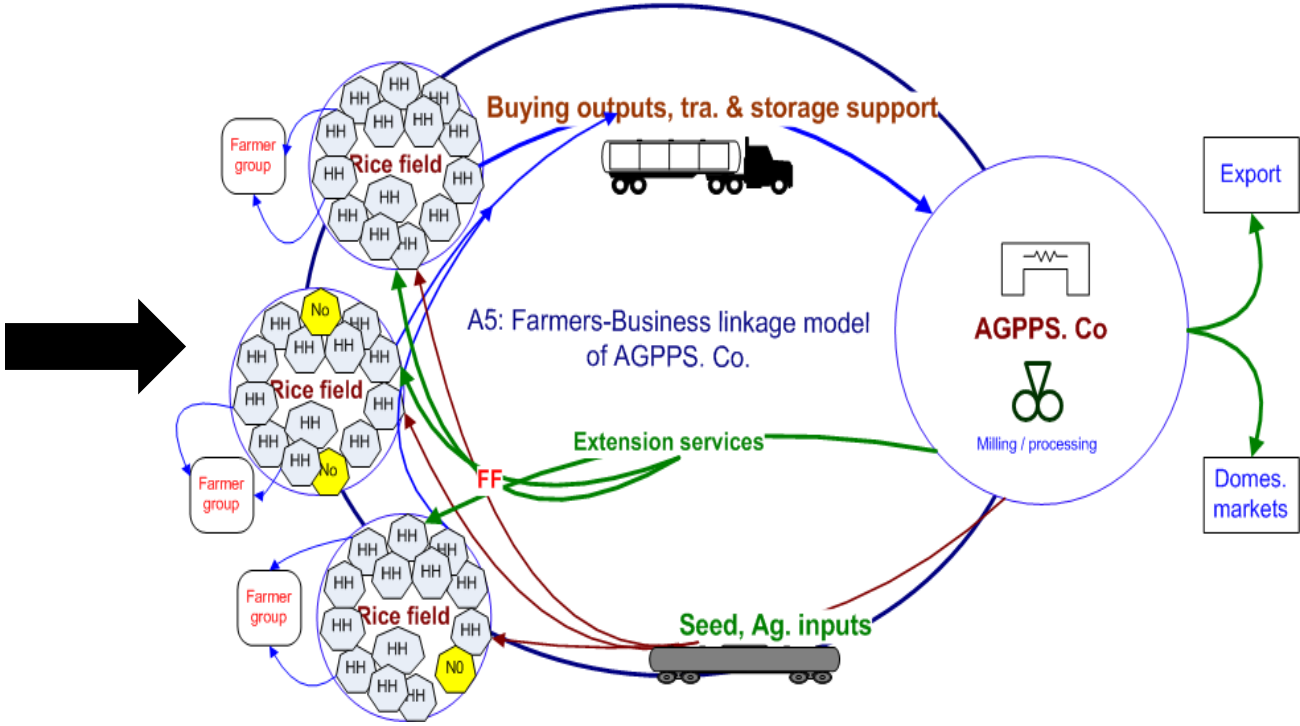
Large Rice Field Model in Vietnam





- large fields enough (from 50-500 ha)
- Farmers are voluntary to participate
- Availability of input dealers and enterprises (exporters) to buy farmer product thru contract farming
- Efficiency: (1) Reduced costs of production; (2) Increase rice productivity and quality ; (3) Improve profits for farmers….;

Source: Pham van Du, Department of Crop Production-MARD

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Changing Rice Consumption

- Income growth
- Urbanization
- Super market revolution in Asia
  - Rice (7% in Delhi, 50% in Beijing, starting in Dhaka)

(Source: Thomas Reardon)

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Future Government Policies

- Direct Payments/Cash transfer: Not linked to current production
- Price based safety net: Counter cyclical payments in the U.S.
- Revenue based safety net: Asian version of the Average Crop Revenue Election (ACRE) in the U.S.
  - Based on national prices, state planted yield and farm planted yields

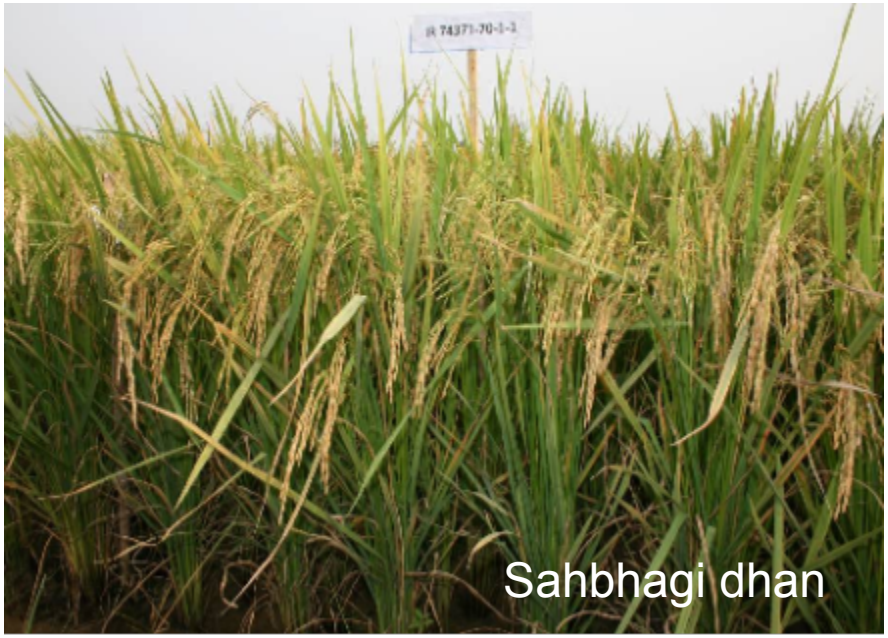
Risk Reducing Technologies

- Government policy should also focus on the development and rapid dissemination of risk reducing technologies

IR64-Sub1 released in Philippines in 2009 as Submarino 1

First successes in making rice less thirsty

- IR74371-70-1-1 recommended for release as “Sahbhagi dhan” in India
- IR74371-54-1-1 released as “NSIC Rc 192” in Philippines
- Release proposal of IR55419-04 submitted in Chhattisgarh, India
- IR77080-B-34-3,IR81047-B-106- 3-4 identified promising in Mozambique



Drought tolerance and submergence tolerance combined in two lowland varieties: Swarna Sub1

2 QTLs: Lines	DTF	HT	GY Stress	GY No stress	QTLs		Sub_1
IR 94391-131-722-2	88	94	4450	8675	$DTY_{3.1}$	$DTY_{2.1}$	s1
IR 94391-131-455-19	88	101	3994	8500	$DTY_{3.1}$	$DTY_{2.1}$	s1
IR 94391-131-165-2	88	84	3975	6947	$DTY_{3.1}$	$DTY_{2.1}$	s1
IR 94391-131-344-1	88	93	3887	7374	$DTY_{3.1}$	$DTY_{2.1}$	s1
IR 94391-131-161-13	88	86	3686	6683	$DTY_{3.1}$	$DTY_{2.1}$	s1
Swarna Sub1	**92**	**90**	**2558**	**5207**			

Team: A. Kumar, A. Henry, B.P. Mallikarjuna Swamy, S. Dixit, P. Vikram, A. Grondin, A. Kohli

Key Messages

- Traditional forms of interventions played crucial role in achieving food security in Asia.

- May have run its course already
  - High cost
  - Cripple the market
  - Restrict farmers to diversify
  - Create inefficiency in the supply chain
  - More instability in the global market
- Focused towards minimizing market risk not production risk

Key Messages

- Asian agriculture is at a cross road.
- Going forward, the govt. policies should focus on:
  - Direct income transfer to the farmers
  - Introduction of some form of revenue safety net
  - Support the development and dissemination of risk reducing technologies

Thank You