



INTERNATIONAL FOOD  
POLICY RESEARCH INSTITUTE  
*sustainable solutions for ending hunger and poverty*

# Input Subsidy Programs in Asia

## What lesson can we learn for Africa

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INPUT SUBSIDY PROGRAM IN SUB-SAHARAN AFRICA

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# Presentation Outline

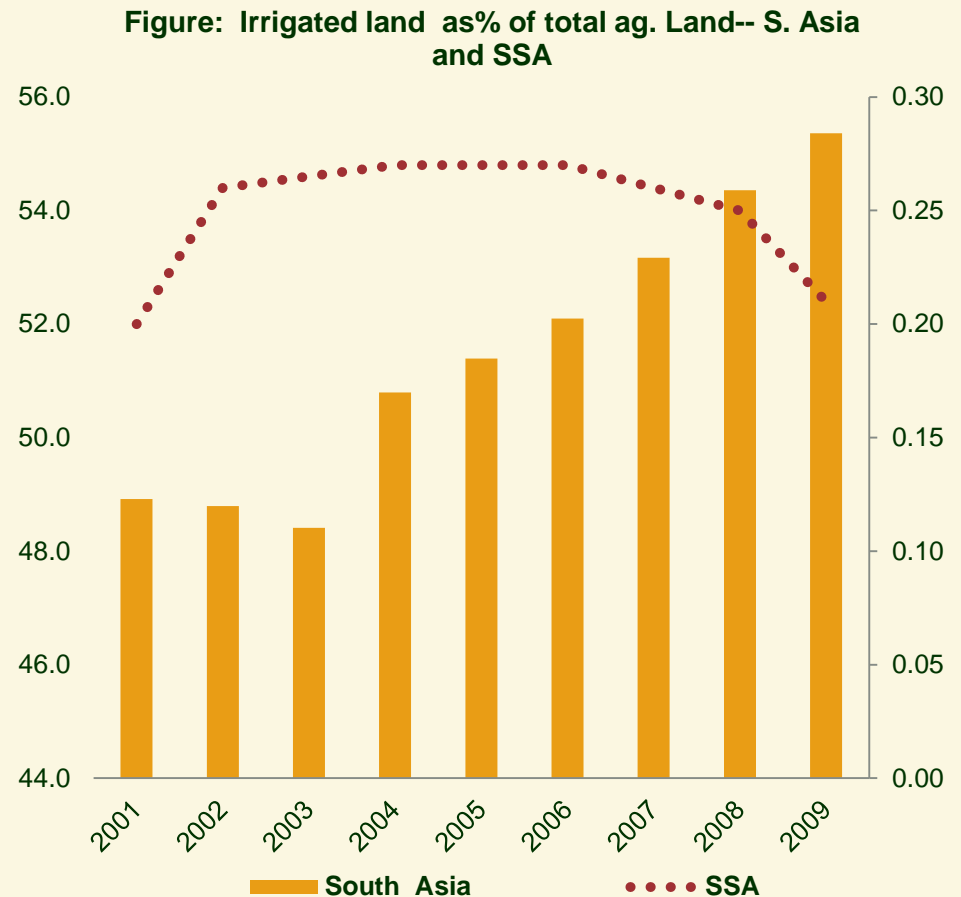
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1. Contextual differences between Asian and African agriculture
2. Differences in policies and strategies
3. Effects of subsidies
4. Recent trends
5. Summary

# 1.1 Differences in natural endowment (1)

## A. Irrigation potentials

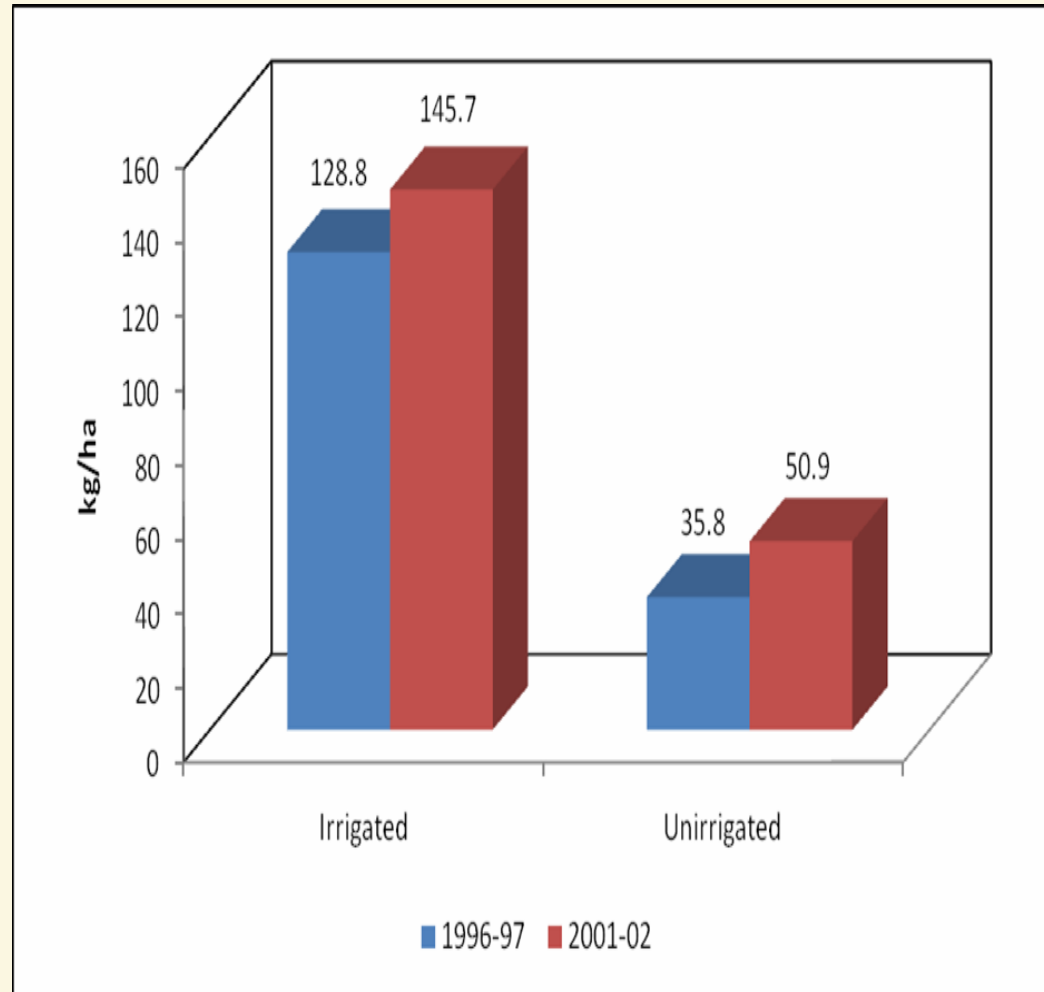
- Irrigation potentials in Asia has been much higher
- In 2009, 56% of agricultural lands were irrigated.
- This compares with only 0.28% in SSA
- Cropping intensity is also lower in SSA-- generally one main crops



# 1.1 Differences in natural endowment (2)

## Irrigation potentials makes the difference

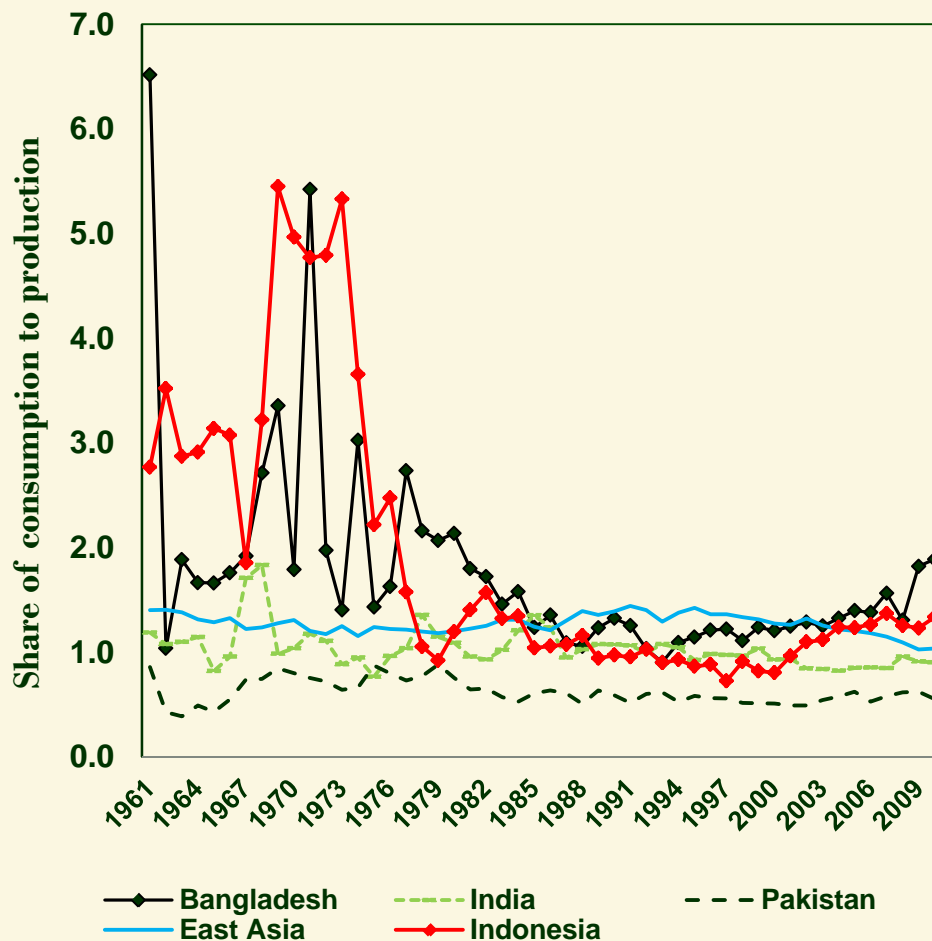
- Fertilizer use in Irrigation land is much higher than in non-irrigated land
- Use of fertilizer in non-irrigated land is only 1/3<sup>rd</sup> of irrigated land—this is similar to many SSA countries including Ethiopia and Kenya



# 1.1 Differences in natural endowment (3)

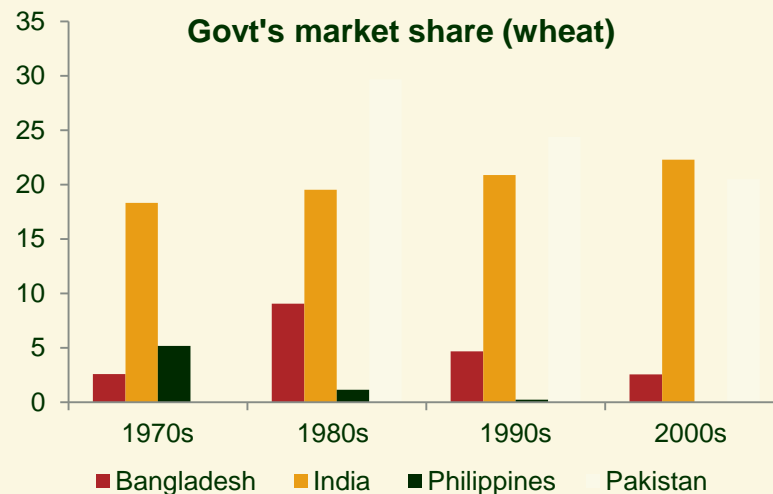
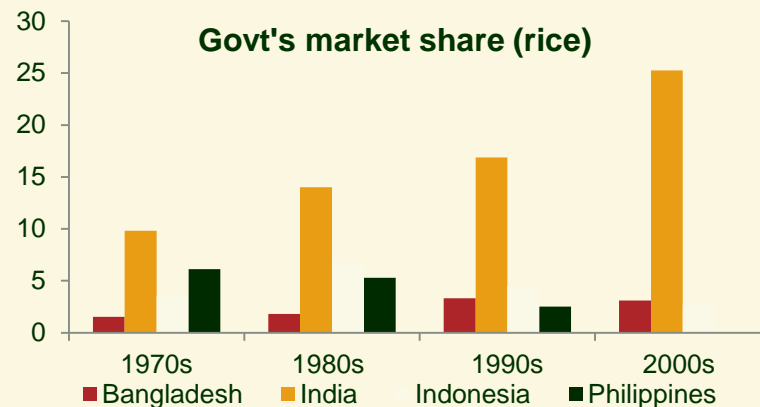
## B. Natural gas

- Due to large markets and availability of gas, fertilizer production grew fast in all five countries
- When Green Revolution began, all countries (except Pakistan) were large net importers
- Domestic production was 1/3<sup>rd</sup> to 1/5<sup>th</sup> of the total use
- By mid 1980s, more or less self-sufficient



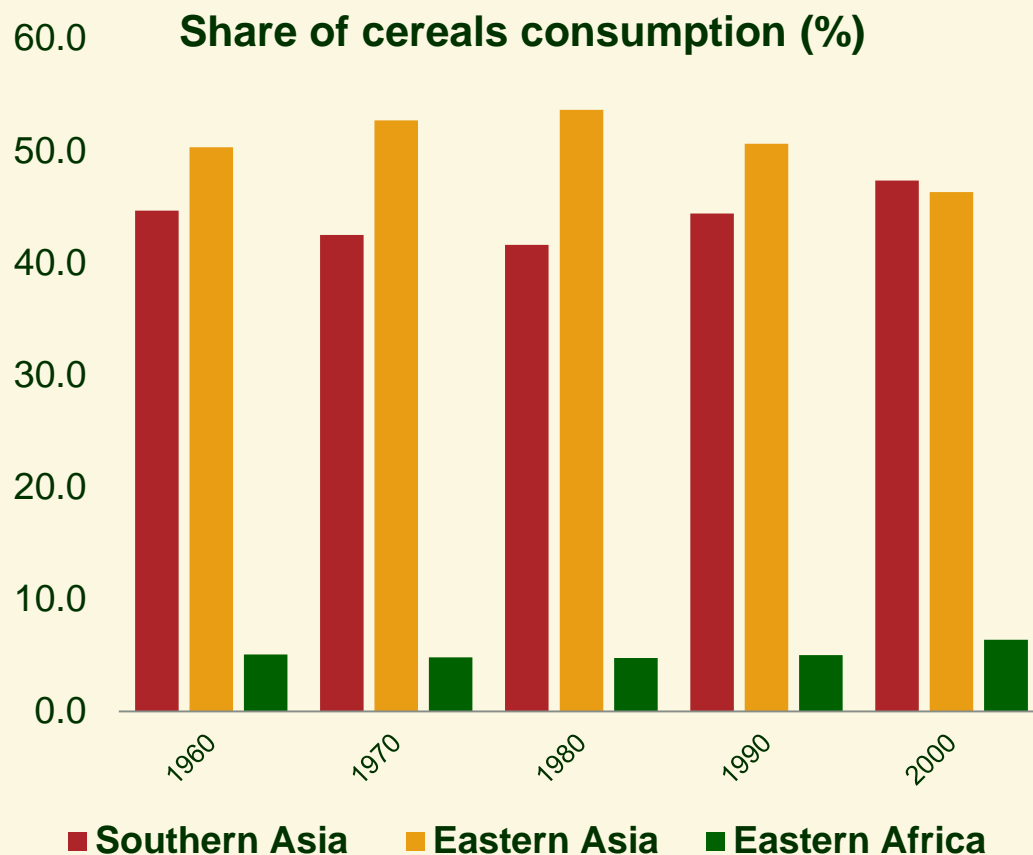
# 1.2 Differences in the degree of interventions

- Unlike many African countries before SAPs, government's shares in ag market was small
  - Governments' shares in rice markets was within 5-7% range, except in India and Pakistan
  - Pakistan and India's shares increased after GR was complete.
  - Except for Pakistan, government's market shares are even smaller



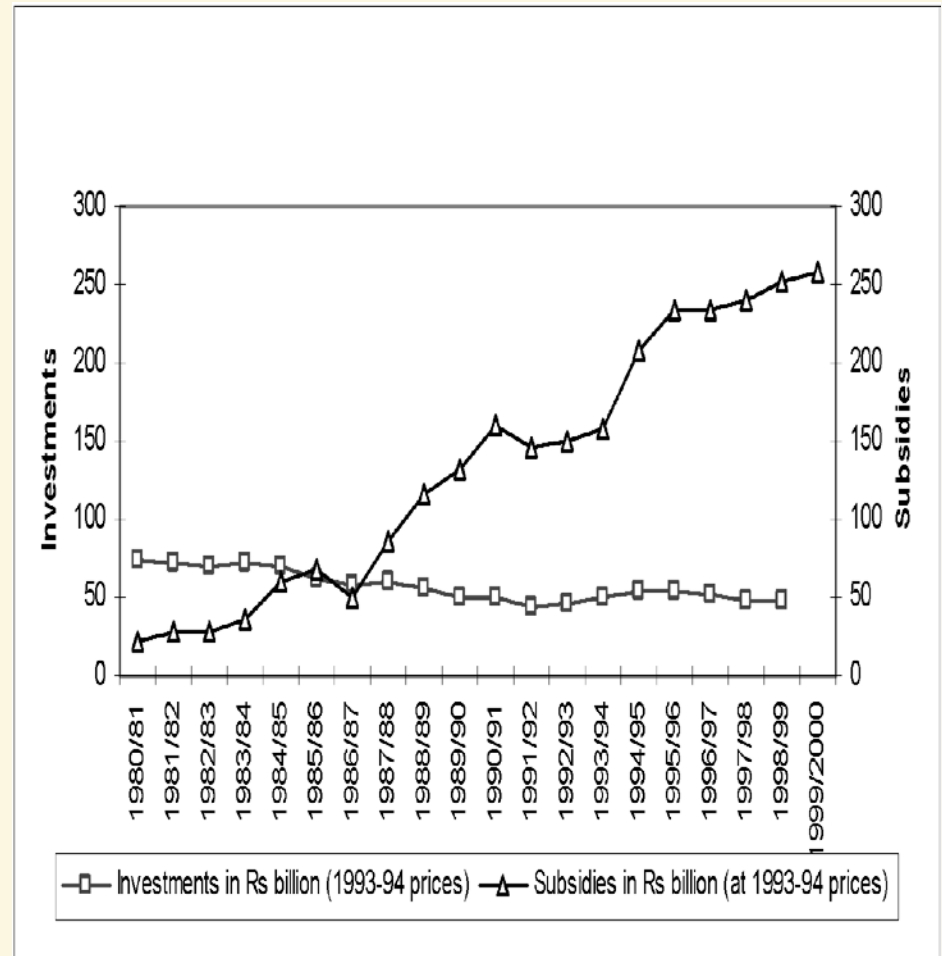
# 1.3 Differences in market size

Market thinness was less of an issue for the Asian GR countries



## 2.1 Differences in policies (1)

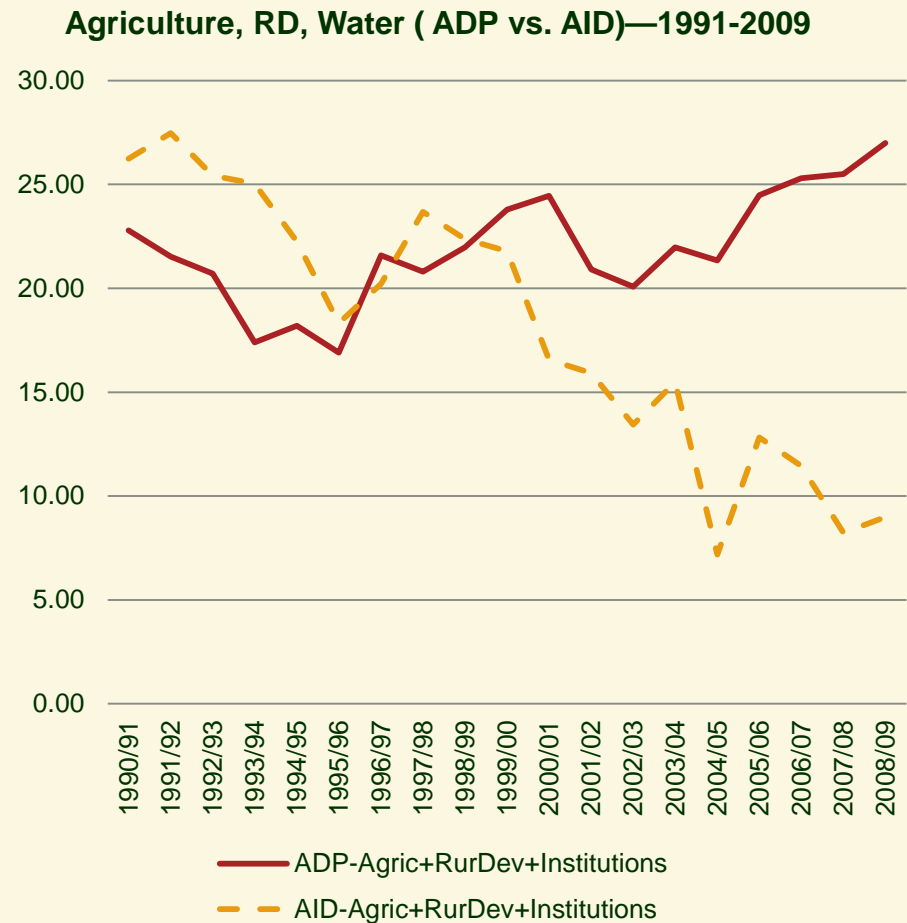
- In Asia, policy focus was not only fertilizer and seed
  - In fact, in the early years of green revolution in India, investments in infrastructure was higher than total ag subsidies
- Similar trends are for Bangladesh.





## 2.2 Differences in policies (2)

- In Bangladesh, spending in ARD continued even when AID declined
- This spending accelerated after the re-introduction of subsidies in 2007-08
- Similar analysis are underway for Pakistan and Indonesia

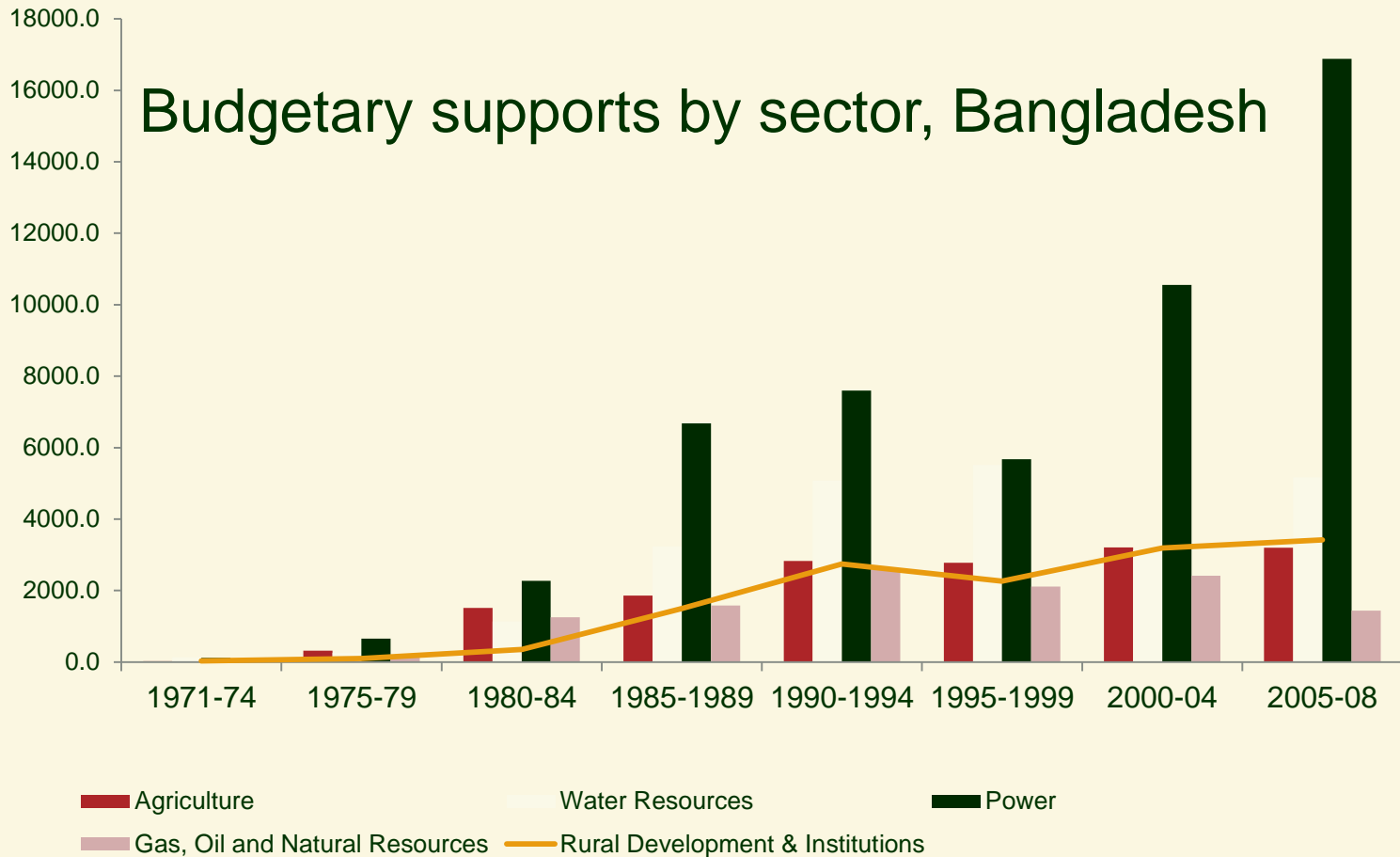


## 2.2 Differences in policies (3)

### Public spending by sectors in Bangladesh

Economic sector	1987-89	1990-92	1993-95	1996-98	1999-01	2002-04	2005-08
Agriculture Rural Dev. Water	11.7	11.1	10.8	11.5	11.5	11.4	14.2
Power development	7.4	5.7	6.8	5.3	5.2	6.1	3.7
Gas, Oil and Natural Resources	2.3	2.8	1.6	2.0	1.4	1.7	0.3
Transportation	4.2	5.9	9.1	8.7	8.6	7.8	4.4
Communication	1.8	2.2	3.4	2.1	3.1	4.2	3.3
Industries	3.9	0.9	0.9	0.6	1.1	1.0	0.7
Education and Religion	11.2	12.6	15.8	15.7	15.4	14.4	15.4
Social Welfare, W.A. and Y.D.	5.9	4.9	4.2	1.6	1.0	1.5	2.4
Physical Planning & Housing	1.6	1.9	2.1	3.2	3.7	3.4	3.0
Health & Family Welfare	5.9	6.5	7.0	6.7	6.3	6.1	6.7
OTHERS	44.2	45.5	38.4	42.7	42.5	42.4	46.0
Total Public expenditure	100.0	100.0	100.0	100.0	100.0	100.0	100.0

## 2.2 Differences in policies (4)



## 2.3 Differences in policies (5)

- In India, fertilizer subsidy was never about only cereals.
- The table below shows the average shares of subsidies by crops (2001-2011)

Crops	Total Fertilizer used ('000 tons)	Total subsidy (Rs. Lakh)	% share in total subsidy	Per ha fertilizer use (Kg)
Paddy	5061.7	367.5	32.2	119.4
Wheat	3189.7	231.6	20.3	130.8
Sugarcane	989.6	71.8	6.3	240.6
Cotton	921	66.9	5.9	110.8
Groundnut	465.9	33.8	3	74.6
Jowar	443.8	32.2	2.8	60
Bajra	304.3	22.1	1.9	29
Maize	258.4	18.8	1.6	55.8
Others	4073.4	295.7	25.9	66.1
All crops	15707.8	1140.4	100	92.6

## 2.3 Differences in policies (6)

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- Input subsidy programs in Asia did not involve price rationing:
  - Prices are determined at the factory gate (or the port if imported)
  - Anyone with a license can market any amount that's profitable to the dealers / traders
  - Crowding out in domestic market is not a serious issue
  - However, cross border trade becomes an issue is the price differences are high between the neighbors
    - It was the case when BD eliminated subsidy
    - It continues to be the case India and Nepal

## 3.1 Distribution of subsidy benefits (India)

	Marginal (<1 ha)	Small (1-2 ha)	Semi-medium (2:0- 4:0)	Medium (4-10 ha)	Large (>10 ha)	All households
<b>Fertilizer consumption per hectare of fertilizer area (kg)</b>						
1991-92	113.4	104.6	101.3	97	98.1	102.8
1996-97	162.1	131.8	123.9	118.6	113.6	131.1
2001-02	164.7	134.7	122.8	113.3	108.4	131.7
<b>Shares of fertilizer use (%)</b>						<b>Total</b>
1991-92	20.6	21.1	24.2	23.9	10.2	100
1996-97	25.6	20.4	23	22.2	8.8	100
2001-02	29.9	22.1	22.1	18.9	7	100

## 4.1 Overall effects on agricultural incentives

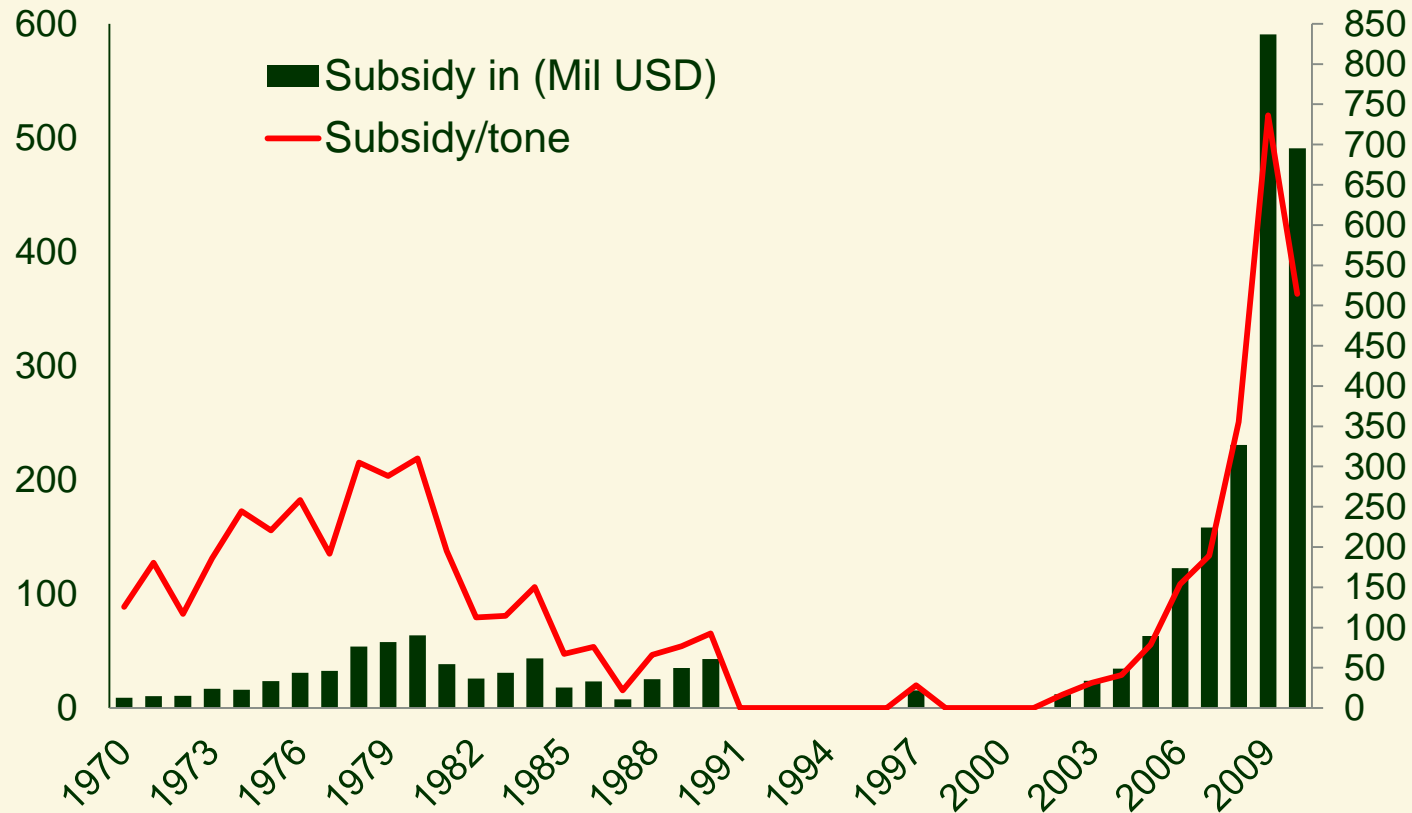
NRA, agriculture (%)	1965-69	1970-74	1975-79	1980-84	1985-89	1990-94	1995-99	2000-04
<b>Countries</b>								
<b>India</b>	5.2	12.6	-7.4	4.1	67.5	2	-2.3	15.4
<b>Pakistan</b>	21.7	9.3	-11.8	-9.3	-5.9	-10.2	-2.6	1.2
<b>Indonesia</b>	--	-3.8	10.4	10.5	-1.9	-7.5	-9.7	13.9
<b>Bangladesh</b>			3.1	3.9	17.4	-2.4	-8	4

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# SOME EMERGING TRENDS



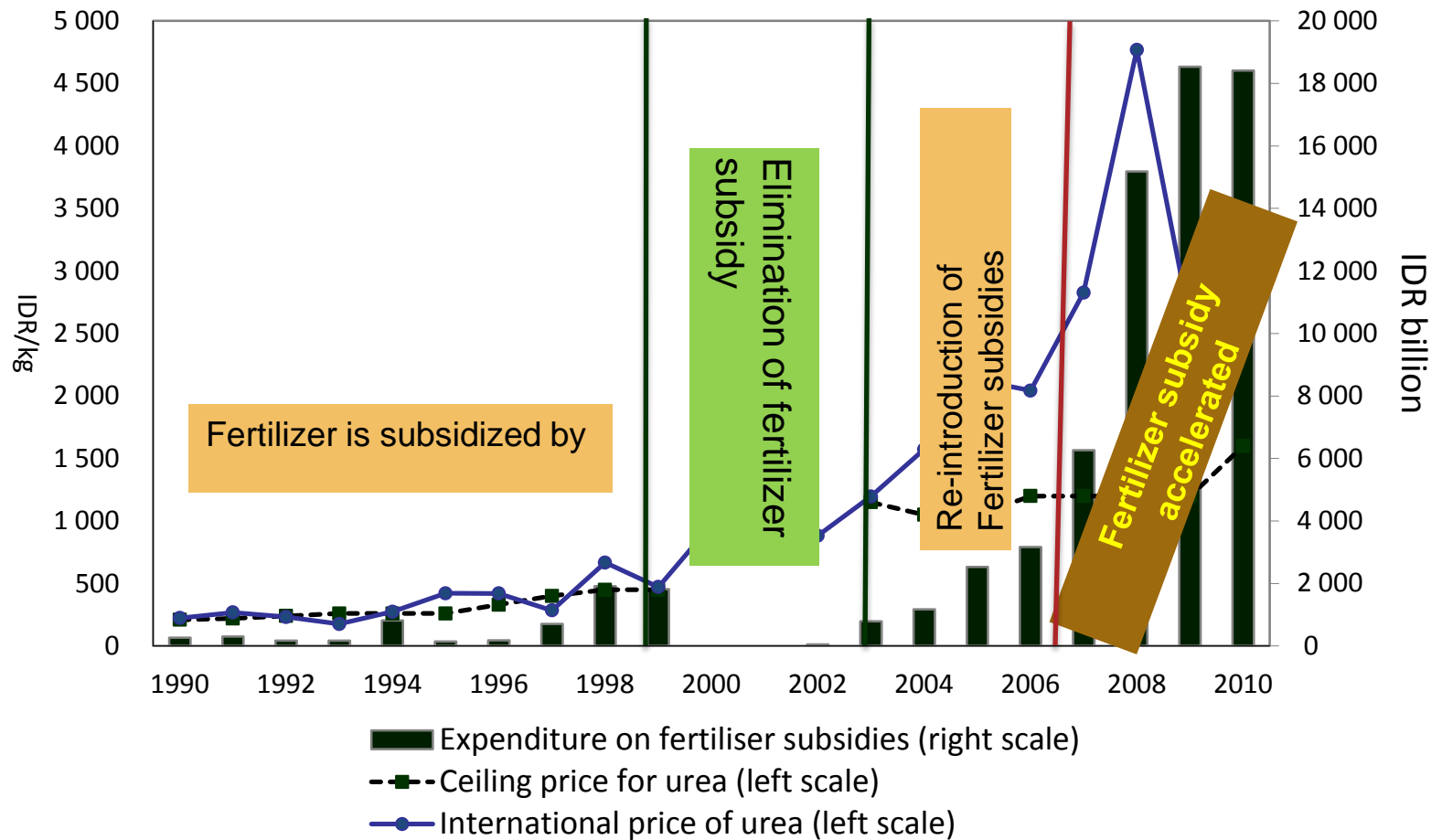
# 5.1. Update 1: Bangladesh



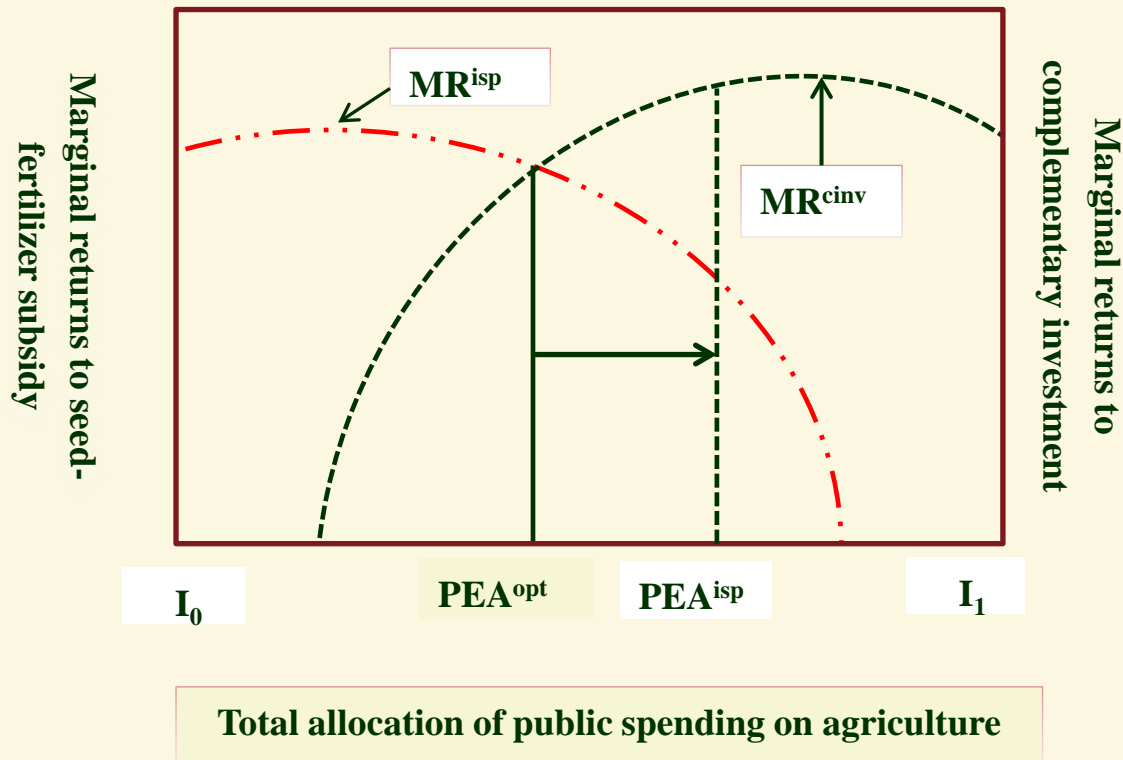
Input subsidies are back in Bangladesh

# 5.2 Update 2: Indonesia

Major shifts in fertilizer subsidy regime in Indonesia, 1990-2010



# Optimal allocation of public spending



# Optimal allocation of public spending (2)

Decades	Top Public Spending	Returns	Rank
<b>Poverty Reduction (per Mill Rs)</b>			
1960s	Roads/ Rural infrastructure	1272	1
1970s	Roads/ Rural infrastructure	1346	1
1980s	Roads/ Rural infrastructure	295	1
1990s	Roads/ Rural infrastructure	335	2
<b>Returns W.R.T. Ag growth (per Rs Spent)</b>			
1960s	Roads/ Rural infrastructure	8.79	1
1970s	Educational Investment	7.88	1
1980s	Agricultural R&D	6.95	1
1990s	Agricultural R&D	6.93	1

# Summary

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## 1. What not to learn from Asia?

- **Lesson #1:** Do not increase subsidies following a shocks like global price hikes
  - Costs of such actions can be very high
  - Cite India and Bangladesh examples

## 2. The implications of endowment differences

- **Lesson #2:** Currently, only a small fraction of land in sub-Saharan Africa (0.28%) is irrigated.
  - Potentials must be much larger; and investments in such efforts can have high pay off.

## 3. The differences in policies

- **Lesson #3** Asia did not achieve productivity growth by focusing only on see and fertilizer. Complementary investments were significant in the early years of GR

# Summary (2)

## 3. The policy differences

- **Lesson #4:** Government do not have to capture very large share of markets in managing price risks
- **Lesson #5:** Rationing subsidies can be challenging. While Asian system had its share of problems, but not rationing in the domestic markets, they avoided crowding out, rent seeking, leakage, and other moral hazards
  - Ethiopia is piloting a project to provide input credit and voucher using ICTs. This can potentially address many of the moral hazards problems implicit in “smart subsidies”

## 4. The incidence of subsidy (who gets it?)

- **Lesson #6** If the land distribution is not highly skewed, the benefits of subsidy are not very unequally distributed.