

# Smart fertilizer subsidies in Sub-Saharan Africa: New wine or just new bottles?

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Panel on Smart Input Subsidies and Sustainable Development  
IFPRI, Washington, DC  
24 July 2009

# Outline

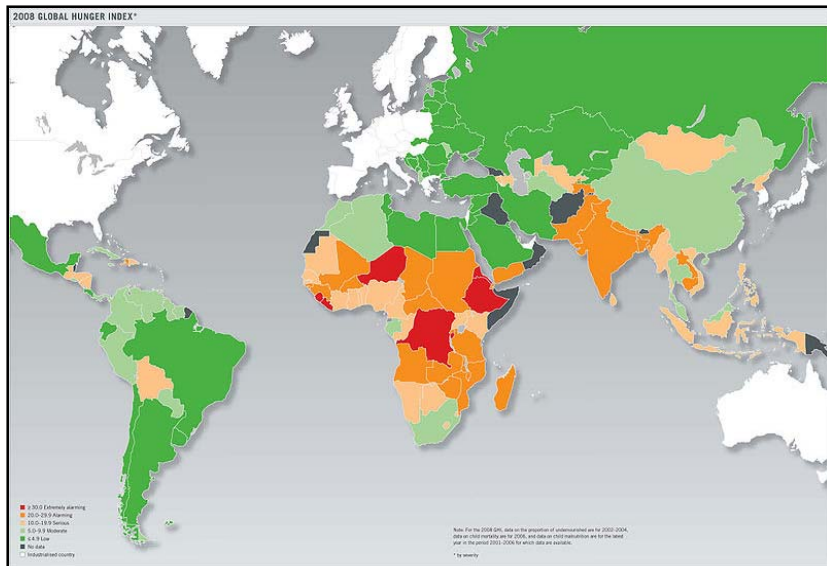
- Why subsidize inputs in Africa?
- Experience with fertilizer subsidies in 1970s & 1980s
- Renewed interest in input subsidies since 2005
- Recent experience with vouchers
- Conclusions

# Why subsidize fertilizer in Africa?

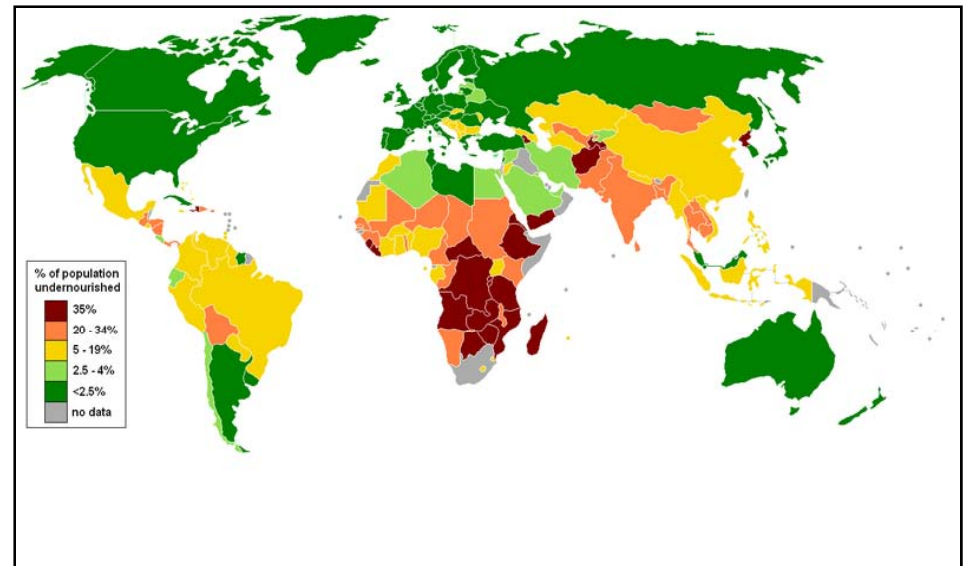
Standard argument is that:

1) Sub-Saharan Africa has some of the highest rates of poverty and malnutrition

IFPRI Global Hunger Index

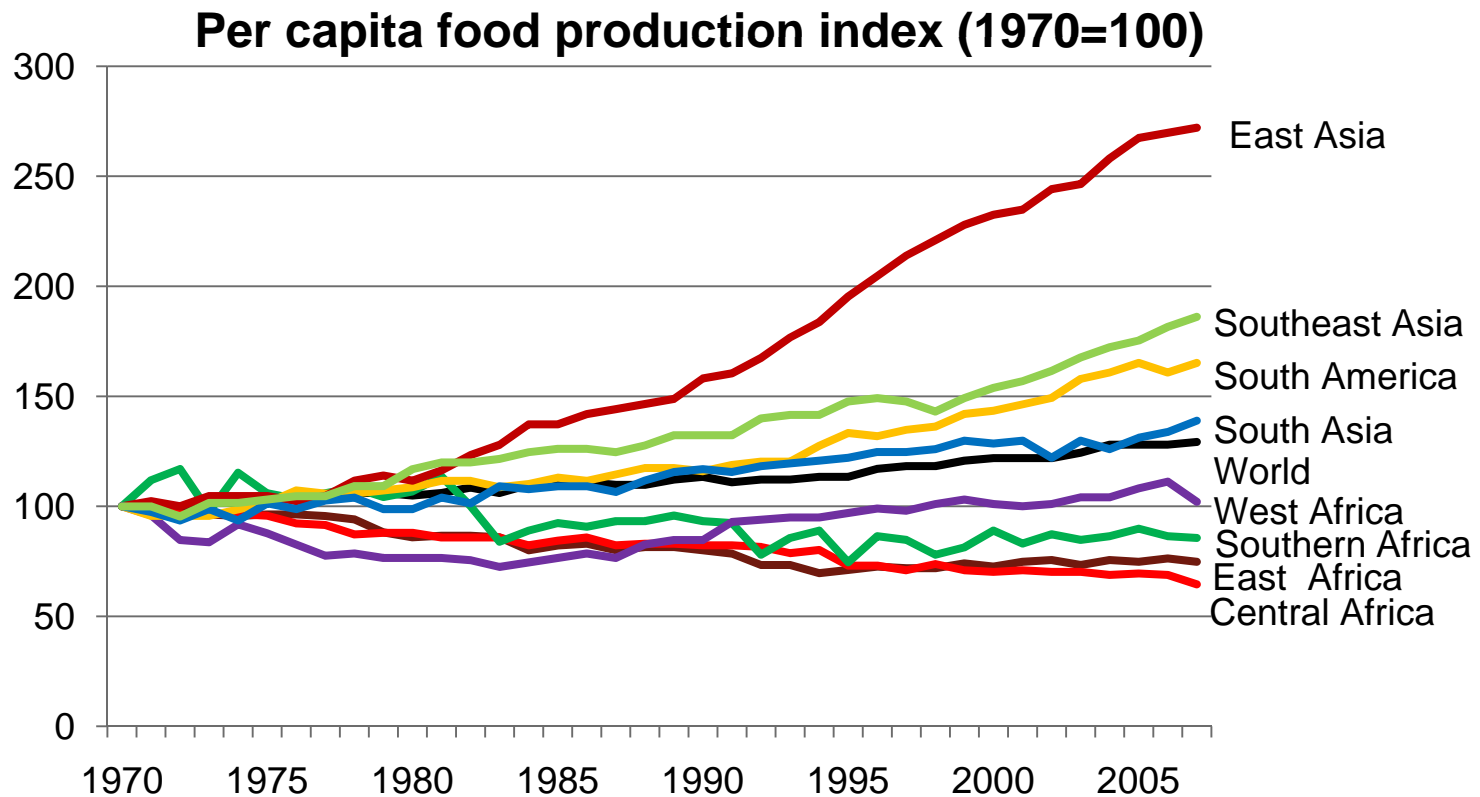


FAO estimates of incidence of undernourishment



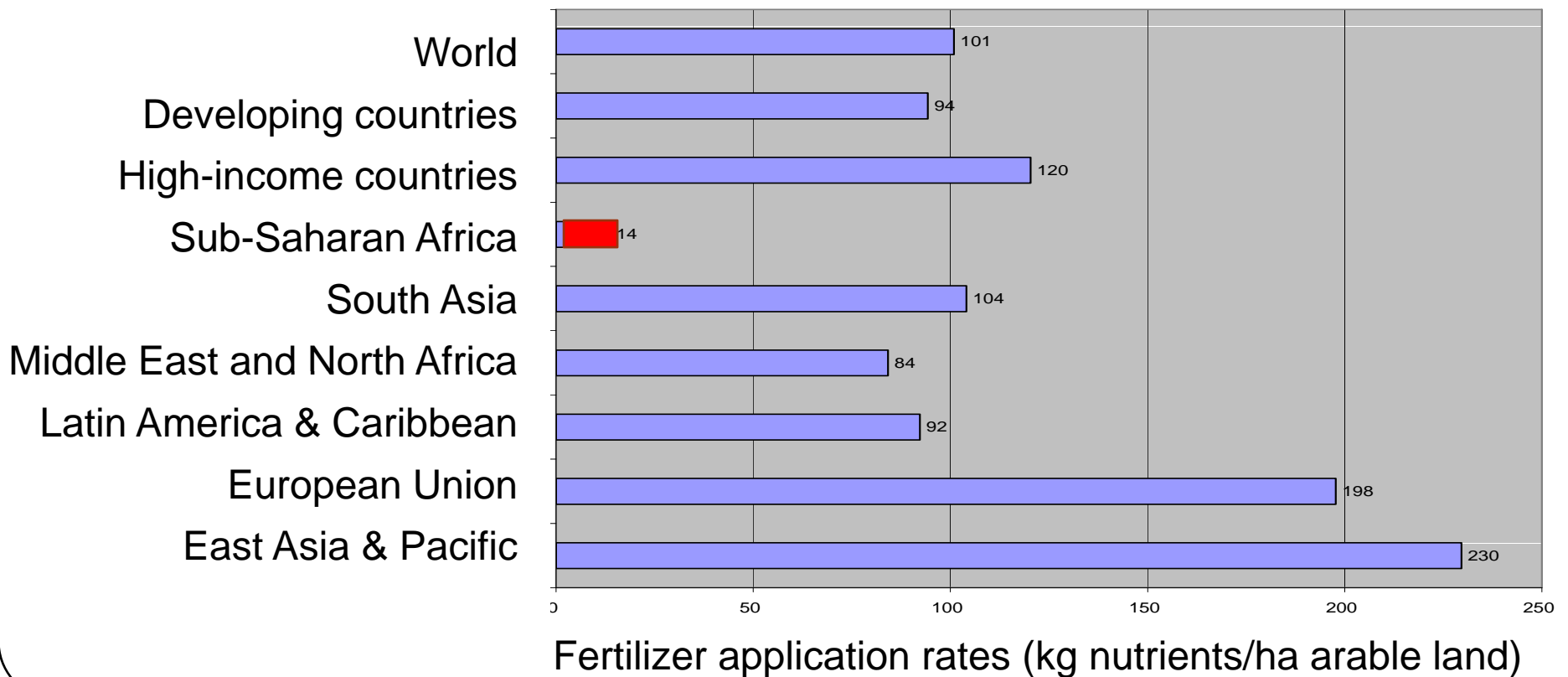
# Why subsidize fertilizer in Africa?

2) This is partly due to stagnant per capita food production in the region



# Why subsidize fertilizer in Africa?

3) and low food production is linked to low use of fertilizer and improved seed



# Why subsidize fertilizer in Africa?

## Economic arguments

### 1. Efficiency

- Fertilizer use by farmers may be sub-optimal because of
  - Lack of information
  - Lack of liquidity
  - Risk aversion
- Subsidy could raise fertilizer use to optimal level

### 2. Equity

- Subsidies help farmers, who are poorer than others
- But untargeted subsidies help largest farmers the most

### 3. Externalities

- Not a widely used justification for subsidies

# Experience with fertilizer subsidies

- **Policies of 1970s and 1980s**
  - One or more state-owned entity had legal monopoly on importation and distribution of fertilizer.
  - Fertilizer was sold at a subsidized pan-territorial price, 20-60% of full cost
  - Over-valued exchange rate added an implicit subsidy to imported fertilizer
- **Variation across countries**
  - West African countries used cotton parastatals
  - Distribution by cooperative, Min of Ag, & SOEs
  - Some countries had more market-based distribution
    - E.g. Kenya, Zimbabwe,

# Experience with fertilizer subsidies

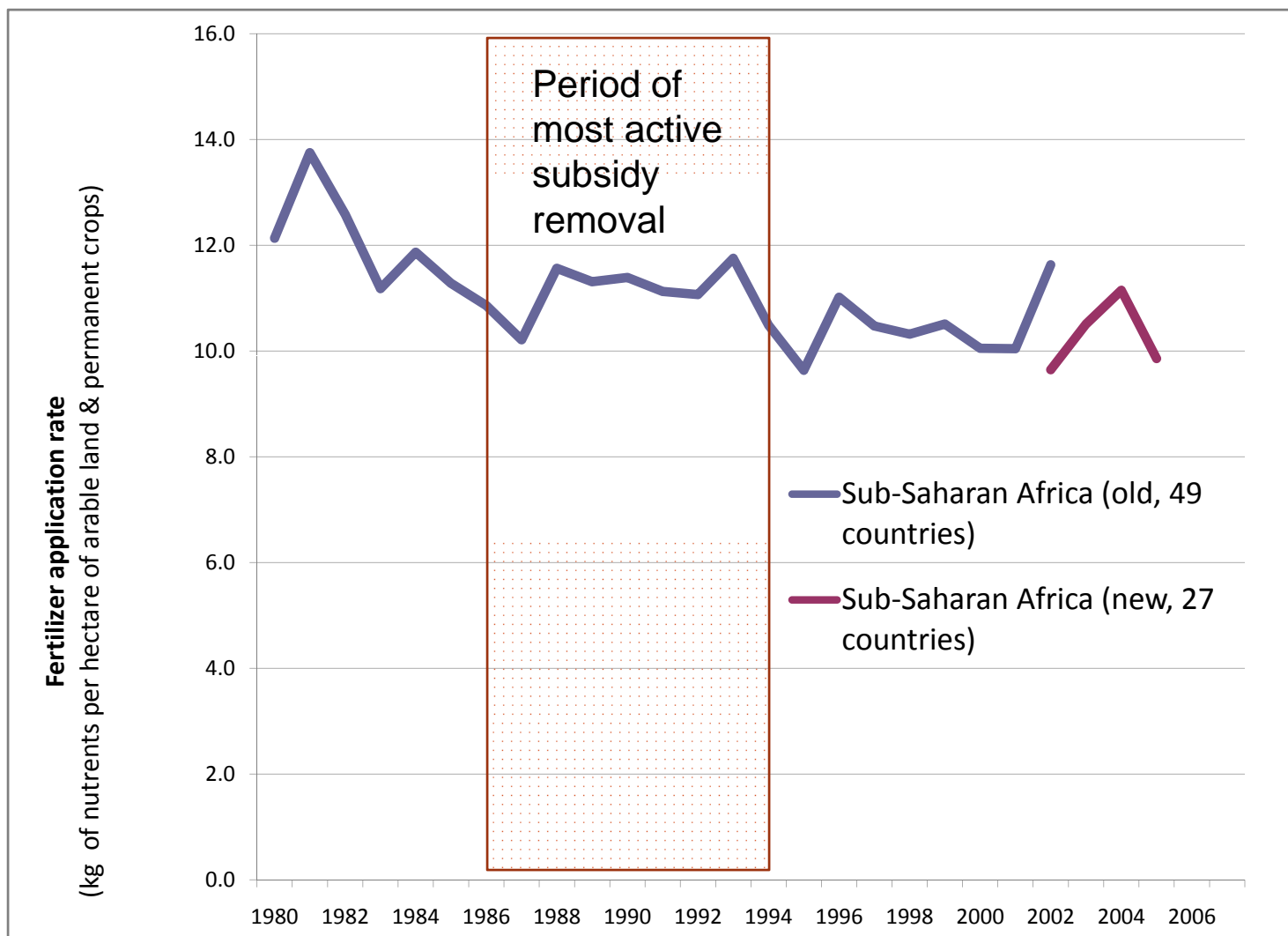
## Problems

- Late delivery of fertilizer
  - Bureaucratic delays & lack of incentives
- Rationing
  - Budget constraints combined with increased demand usually led to rationing
- Displacement of private sector
- High fiscal cost
  - High costs due to overstaffing & lack of cost control
  - Cost more than 3% of government budget in Nigeria, Senegal, Malawi, and Tanzania
  - Affordable during commodity boom of 1970s but not in 1980s

# Experience with fertilizer subsidies

- **Structural adjustment programs**
  - Market liberalization, privatization, fiscal deficit reduction
  - In fertilizer, universal subsidies phased out
    - Late 1980s, Benin, Ghana, Madagascar, Senegal & Togo
    - Early 1990s, Tanzania, Zambia, Cameroon, Malawi, & Nigeria
  - Market exchange rates eliminated implicit subsidies
  - End of state monopoly on imports & distribution
  - But not all fertilizer markets fully liberalized (Nigeria, Malawi, Zambia, Ethiopia, etc.)
- Conventional wisdom is that reforms contributed to macroeconomic stability but reduced fertilizer use

## Effect of fertilizer subsidy removal: Africa-wide



Source: FAO, 2009.

## Effect of fertilizer subsidy removal: specific countries

- Compare five-year average before and after subsidy removal in nine countries
- Result
  - Fertilizer use **declined 25-40% in five countries**: Nigeria, Ghana, Cameroon, Senegal, & Tanzania
  - Fertilizer use **increased 14-500% in three countries**: Benin, Togo, Mali, & Madagascar
- Explanation
  - Subsidy only one factor in determining price
  - Price only one factor in determining fertilizer use
  - Devaluation increased fertilizer use in cotton-exporting countries

# Renewed interest in fertilizer subsidies

## Contributing factors

- Jeff Sachs and Millennium Development Villages
  - Demonstrating intensive development assistance including fertilizer subsidy
- Experience of Malawi
  - 2005 Agricultural Input Subsidy Programme (AISP) credited with making Malawi self-sufficient (exporter) of maize
- Abuja Fertilizer Summit in 2006
  - Promote idea of green revolution in Africa and advantages of vouchers as strategy to avoid pitfalls of old subsidies
- Food crisis of 2007-08
  - High price of food and fertilizer focused attention on food production and access to inputs

# Renewed interest in fertilizer subsidies

## Smart subsidies

- Subsidies that are targeted to poor and designed to promote rather than replace private sector

## Input vouchers

- Certificate which entitles farmer to buy inputs at subsidized price. The input vendor can redeem voucher for cash from government (*not* equivalent to smart subsidy)

## Potential advantages of vouchers

- *Compatible* with targeting and private-sector distribution of inputs so it can promote private input distribution network ie “smart subsidies”
- May reduce costs if distribution by private sector
- Seen as way to stimulate fertilizer use without pitfalls of subsidies of 1970s and 1980s

# Recent experience with vouchers

## Malawi: Evolution of fertilizer policy

- Mid-1990s – Universal fertilizer subsidies phased out
- 1998-99 – Starter Pack (SP)
  - Free small packs of fertilizer and seed to all farmers
  - 10-40% of fertilizer subsidized
- 2000-04 – Targeted Input Programme (TIP)
  - Attempts to target subsidized inputs to poor
  - Vouchers used but redeemable at ADMARC & SFFRRM
  - 10-20% of fertilizer subsidized
- 2005-now – Agricultural Input Subsidy Programme (AISP)
  - Farmers can buy 100 kg fertilizer at 20% of cost
  - Voucher based but private retailers excluded
  - Half of fertilizer subsidized

# Recent experience with vouchers

## Strengths of Malawi AISP

- Large-scale
- Combined with good weather, created maize self-sufficiency and exports to Zimbabwe
- Detailed monitoring and evaluation

## Weaknesses of Malawi AISP

- Private retailers largely excluded from program, so AISP undermines private retailers (share fell from 80% to 55%)
- High cost
  - 2006-07: US\$ 91 million or 5% of national budget
  - 2007-08: US\$ 200 million due to higher cost of fertilizer
- Late or unpredictable delivery of fertilizer
- Confusion about eligibility of retailers and farmers

# Recent experience with vouchers

## Tanzania

- 2003-2007 Subsidies for fertilizer transport to remote areas
  - Provided to wholesalers, but price controls to ensure benefits passed to farmers; numerous problems
- National Agricultural Input Voucher Scheme (NAIVS)
  - Two pilot districts in 2007, expanded to 53 districts in 2008
  - Targeting by household – will cover 2.5 out of 5 million households
  - Vouchers cover 50% of cost of two bags of fertilizer and one bag of seed
  - All sales through private input dealers, easy redemption
  - Training and certification of dealers by CNFA
  - Cost rises from US\$ 60 m to US\$ 146 m
  - IDA to cover about half of cost for three years only

# Recent experience with vouchers

## Ghana

- In 2008, launched voucher-based subsidy program (US\$15m)
- Vouchers redeemable by fertilizer importers, so independent dealers excluded from program
- Program began too late to benefit farmers in south

## Kenya

- More limited voucher program started in 2006
- Targeted to poor and vulnerable

# Conclusions

## Universal subsidies of 1970s and 1980s

- Conventional wisdom: costly and inefficient but they stimulated fertilizer use and crop production
- However, evidence that they stimulated fertilizer use is mixed

## Input vouchers – do they avoid problems of universal subsidies?

- Can vouchers can promote private distribution network?
  - Yes but only if well designed
  - Malawi no, Ghana somewhat, Tanzania probably
- Can vouchers be targeted to poor?
  - In Malawi, targeting poor households has been difficult
- Are voucher systems vulnerable to delays in delivery?
  - Yes, to some degree. It happened in Ghana 2008 & Malawi 2003
- Are vouchers a good investment?
  - Need more evidence, Malawi BC ratio was 0.76 – 1.36

# Conclusions

## Input vouchers – lessons

- Vouchers must be widely redeemable
- Funding must be provided early
- Features of design must be transparent and communicated
- Voucher program should be complemented with fertilizer market development activities
- Voucher program is no substitute for agricultural research, roads, conducive investment environment, and consistent agricultural policy
- Tanzania NAIVS is most promising model but questions remain:
  - Do benefits (expanded output) justify costs?
  - Is targeting to poor or small farmers feasible?
  - Is it fiscally sustainable?