

EVALUATION OF THE 2006/7 AGRICULTURAL INPUT SUPPLY PROGRAMME, MALAWI

REPORT

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& African Studies
(SOAS)

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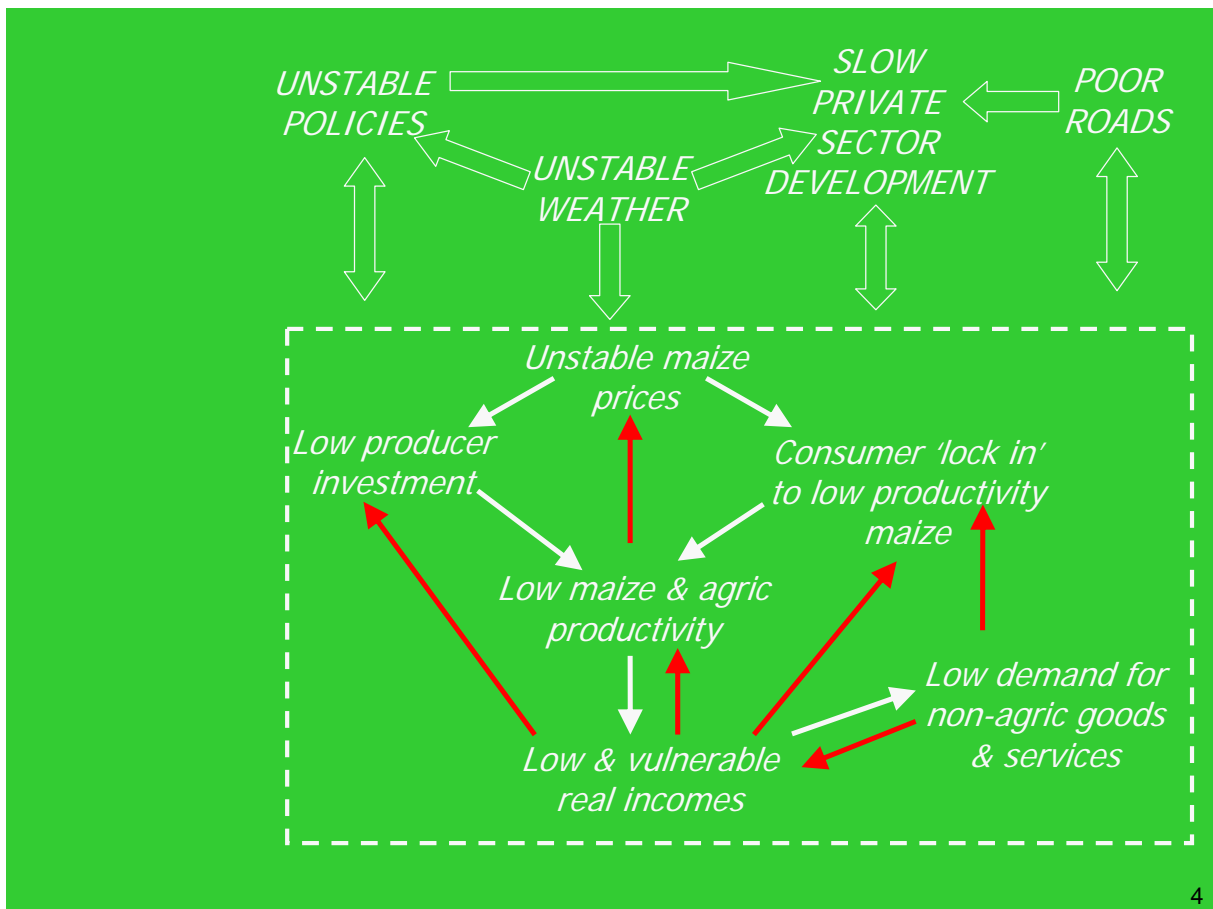
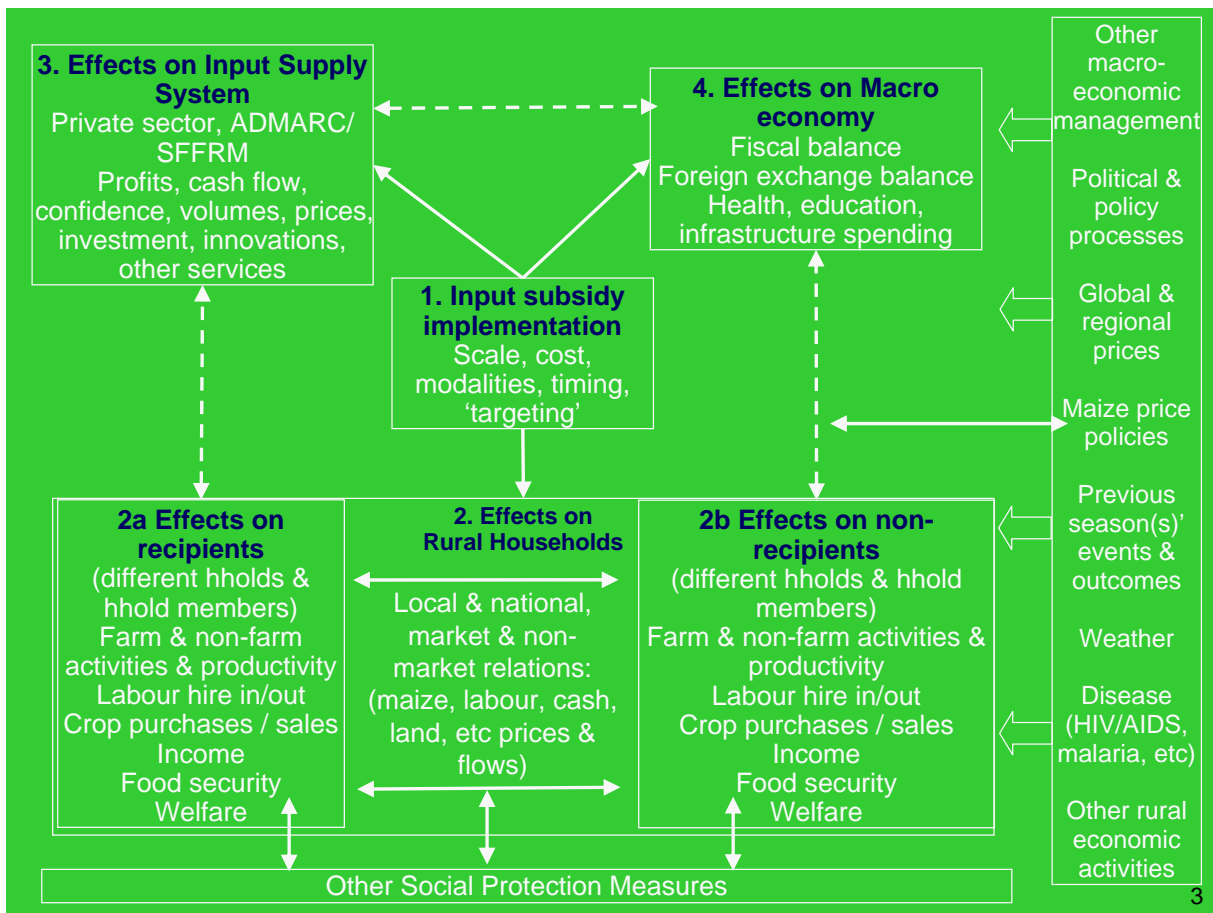
**Future
Agricultures
(DFID)**

Lilongwe March 2008

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Outline

- Introduction & framework
- Achievements
 - Implementation & distribution
 - Input market development
 - Benefit / cost analysis
 - Livelihoods, social protection & poverty reduction
- Lessons learnt & recommendations
- Challenges



Scale of the 2006/7 AISP

- ❑ Fertilizers: 174,688 MT of subsidized fertilizers mainly sold through ADMARC and SFFRFM with 49,215 MT sold through the private sector retail.
 - ❑ Maize Seeds: 4,524 tonnes of subsidized maize seeds - 76% being hybrid seeds and 24% OPV seeds.
 - ❑ In terms of coupons (base and supplementary):
 - 3.6 million Urea and NPK coupons
 - 0.4 million D Compound and CAN coupons
 - Under 2.0 million seed coupons
 - ❑ Estimated coupons receipt balances coupons redeemed using MoAFS farm family figures but not with NSO figures
- Financial costs of programme
- MK10.34 billion (MK9.01 by government against budget of MK7.2 billion)
 - Cost was 43% of MoAFS budget

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Findings on Input Procurement

- ❑ Negotiations over modalities of private sector participation led to increased cost of importing fertilizers from \$440 to \$454 per tonne.
- ❑ Seed subsidy which was entirely handled by the private sector did not have procurement problems as was the case for fertilizers .
- ❑ Distribution was late & some districts were over supplied while others were under-supplied

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Findings on Coupon Distribution

- Variations across districts on the procedures for allocation and distribution of coupons.
 - DDC was universal entry point at district level.
 - Varied TA involvement – stronger influence over the processes in the centre less so in the north.
 - Supplementary coupons using different channels – DADO and extension staff.

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Targeting of Coupons

- Targeting varied and used a combination of poverty and productive indicators
 - with inclusion of poor and exclusion of poor
 - evidence of ability to purchase was pre-condition
 - access to land and labour, capacity to adopt/utilize technology
 - some cases on first come-first-served basis

- Female-headed households were less likely to receive fertilizer coupons, and also received less per household.

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Targeting of Coupons (conti..)

- ❑ Subsidy recipients were more wealthy than non-recipients in terms of land size, assets, incomes and expenditures.
- ❑ The subsidy reached more productive full time farmers.
- ❑ Positive correlation between subsidy receipt and social safety net receipt especially in the central region.

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Access to Inputs

- ❑ Most households used savings and wages from ganyu to finance their purchase of subsidized inputs.
 - In Mzimba, remittances from South Africa played an important role.
 - In Lilongwe, some households sold crops and livestock to obtain cash.
- ❑ Coverage of safety nets was patchy, but where there were safety nets – public works programmes that paid wages in cash – assisted households to redeem coupons.
 - However, timing of safety nets was critical – both vis-à-vis coupon redemption, and trade-off with own-farm activities.

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Access to Inputs (conti...)

- ❑ Access to input markets was problematic – long queues, limited stocks, payment of tips.
 - Long distances
 - Private sector concentrating in urban and peri-urban areas
 - Poor road infrastructure

- ❑ Most of the coupons were received in November (49%) and December (30%) while some in January and February – with implications on appropriate use.

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Irregularities

- ❑ Coupons being sold, fake coupons – these may increase overtime and warrant changing security features every year

- ❑ Payment of 'tips' to access coupons and inputs
 - 5% of coupons were accessed with some payments to traders, traditional leaders and VDC members (Median MK600).
 - 20% of fertilizer coupons were redeemed by paying 'tips' with mean redemption price ranging from MK983 (ADMARC/SFFRFM) to MK1,223 (others).

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Objective and Key Elements of Input Market Analyses

- Examine performance of and impacts on different types of actors

Key actors: ADMARC/SFFRFM, private sector importers, private sector distribution chains, cooperatives, independent agro dealers

Indicators of interest: sales volume trends, displacement of commercial sales, costs, confidence in the sector, investment, competition

- Solicit recommendations for improvements

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Sources of Information

- Interviews of key actors in seed and fertilizer procurement (public and private)
- Collection/review of import and sales trend data for fertilizer: 1997/8 – 2006/07
- Survey of 271 retailer outlets in six districts:
Mzimba (50) and Rumphi (41) in North
Lilongwe (50) and Kasungu (50) in Center
Blantyre (38) and Machinga (42) in South

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Strengths of 2006/07 Programme: March 2007

- ❑ *Very efficient Logistics Unit*
- ❑ *Empowerment of the private sector*
- ❑ *GOM, donor, private sector dialogue*
- ❑ *Use of GOM infrastructure*
- ❑ *Seed program left choice to farmers*
- ❑ *Seed marketing opportunity*
- ❑ *Poor farmers benefited*
- ❑ *Sales for most improved over 2005/06*

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Weaknesses of 2006/7 Programme: March 2007

- ❑ *VERY late design and implementation*
- ❑ *Poor tendering process*
- ❑ *Poor voucher design*
- ❑ *Low fertilizer redemption value*
- ❑ *MK rather than US\$ redemption value*
- ❑ *Slow voucher processing by ADMARC*
- ❑ *Slow voucher redemption → poor cash flow*
- ❑ *Weak institutions for monitoring product quality*
- ❑ *Information campaign not adequate*
- ❑ *Appears to be significant “displacement” of commercial sales*

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Signs of Confidence: Seed Sector

- 67% of retailers reported increased OPV and hybrid sales, with variations by type of retailer
 - distributors and coops more than average
 - independent agrodealers less than average
- Increased demand for cash purchases of OPV and hybrid varieties in Nov/Dec 2007, prior to 2007/08 subsidy announcements
- Flexibility of seed voucher system is cited by suppliers as reason for increase in hybrid demand

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Signs of Confidence: Fertilizer Importers & Distributors

- Most recent entrants in procurement are expanding their market share and distribution networks
- Distributors' outlets in retailer survey increased sales volume by 70% over 2004/05 and 218% over 2005/06;
- Distributors report plans to expand distribution networks in near term by about 40 shops.

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Signs of Stress: Independent Agrodealers Selling Fertilizers

- ❑ Small in volume terms but willing to sell small quantities
- ❑ Sales decline for 75% for independent ADs in retailer survey
- ❑ 2006/07 sales only 8% of 2004/05 levels
- ❑ 70% of 56 surveyed by CNFA anticipate “dismal” season if they are excluded from 2007/08 AISP

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Expansion of Retail Supply

- ❑ Retailers' perceptions of competition trends
60% see competition increasing
- ❑ Serving under-served areas
ADMARC and coops in the forefront with average of 1.8 and 2.7 competitors per market
- ❑ Central Region markets becoming concentrated
Average of 5.5 competitors per retailer in Kasungu vs. 3.8 in overall sample
(implication: future private sector retail network expansion needs to take place in remote areas)

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Displacement: Two Perspectives

- ❑ Unsubsidized versus subsidized sales: amount of fertilizer that farmers would have purchased for cash had the subsidy programme not been in place minus the amount they actually purchased.
- ❑ Private supplier channel: aggregate private sector sales anticipated without the programme compared to actual sales with the programme (whether subsidized or not).

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What Are Implications of Unsubsidized Displacement?

- ❑ At 40% displacement, farmers reduce purchases of unsubsidized fertilizer by 40 kg on average for each 100 kg of subsidized fertilizer received.
- ❑ Assume 1 ton of fertilizer produces roughly 5 tons of additional grain (15kg grain/kg N; 33% N).
- ❑ With 40% displacement we get only 3 tons of additional grain instead of 5 tons.

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Approaches Used to Estimate Unsubsidized Displacement

- ❑ National sales trends analysis to compare actual and estimated counterfactual sales of subsidized and unsubsidized quantities of maize & tobacco fertilizer: 30 % displacement (20% in 2005/6)
- ❑ Comparisons of household data for subsidized vs. unsubsidized fertilizer use (**34% - 48%**)
- ❑ Displacement lower for poorer farmers compared to wealthier farmers
 - Poorest third of households **25%**
 - Middle third of households **40%**
 - Wealthiest third of households **58%**

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Private Supplier Channel Displacement Estimate for Fertilizer

- ❑ Analysis of relationship between private sector sales and sales through ADMARC/SFFRFM outlets with and without subsidy program indicate displacement of sales by private channels of 26% (32% in 2005/6)

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Displacement of PS Seed Sales

- ❑ Lack of times series data on seed makes estimate of counterfactual infeasible
- ❑ Mentioned less frequently as an issue by seed suppliers (compared to fertilizer suppliers)
- ❑ Overall sales of unsubsidized seed represented a larger share of seed sales (17%) than of fertilizer sales (7%), suggesting a stronger private sector market for seeds.

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'Economic' or 'Social' Benefit / Cost Analysis

- ❑ Estimate of value of **incremental** benefits & costs of the programme to the national economy
- ❑ Static & limited estimate, largely ignores
 - Dynamic impacts on growth
 - Poverty reduction & social protection benefits
- ❑ Requires estimates of
 - Incremental costs to government & farmers
 - Incremental production
 - Value or prices of incremental production
- ❑ **Primary value is in investigating the sensitivity of programme efficiency to external & management variables**

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Incremental costs

- ❑ Incremental fertiliser & seed costs to farmers & government (ignore displaced inputs)
- ❑ Farm labour & other costs
- ❑ Programme costs
- ❑ Incremental costs for displaced inputs (15%)

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Incremental production

- ❑ Difficulties with survey data
- ❑ Focus on maize
- ❑ Fertiliser benefits
 - 12, 15 or 18 kg grain yield per kg N
 - affected by timeliness and method of application, maize variety, and rainfall
- ❑ Seed benefits
 - 71, 118 or 163 kg grain yield per kg seed
- ❑ Incremental production estimates range from 344,000 to 778,000 mt depending on above assumptions and displacement

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Maize prices

- ❑ Economic analysis should use average of 'with' and 'without' prices without any interventions
- ❑ Difficulties
 - Repeated interventions generally lowering prices
 - Regional (Mozambique) or International import prices?
 - High prices give a high benefit cost ratio but are bad for the poor and for growth
 - Low prices (not too low) give a low benefit cost ratio but are good for the poor and for growth

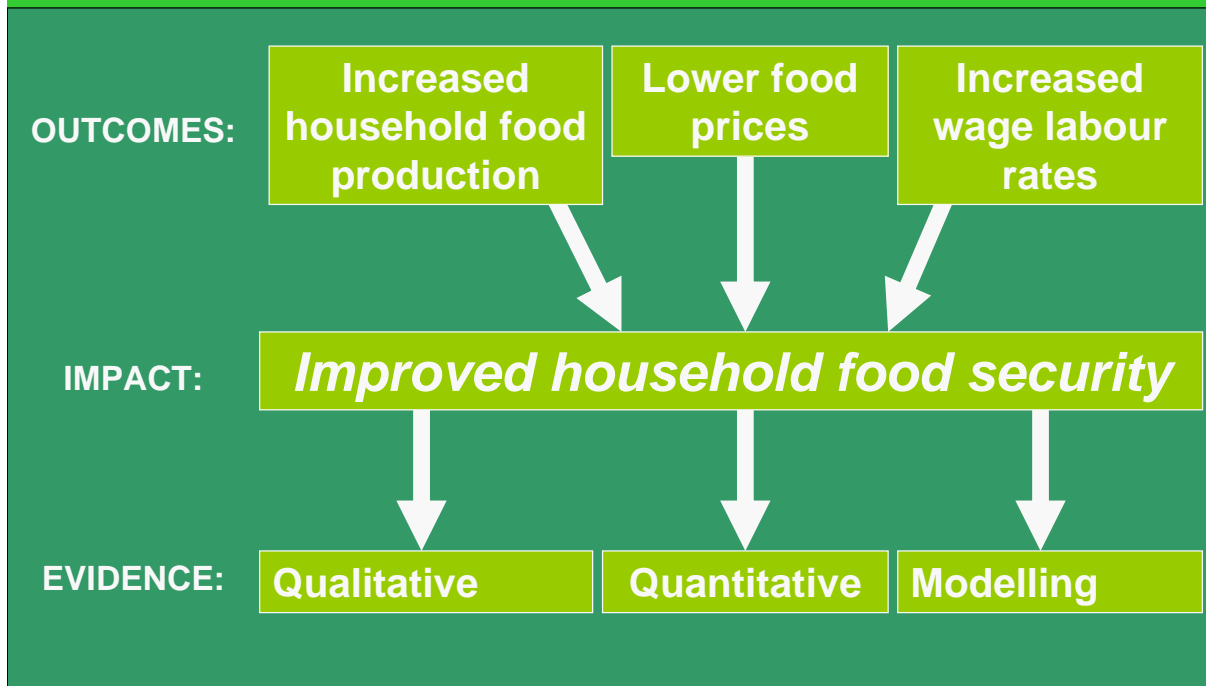
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Benefit / Cost Analysis Results & Conclusions

- ❑ Benefit cost analysis for both 2006/7 & future
 - can be highly favourable or unfavourable
 - 2006/7: 0.75 to 1.36
 - Future : 0.65 to 1.59 (with 30% fertiliser price increase & range of rainfall & maize price scenarios)
 - sensitive to yield increments & to maize & fertiliser prices
 - fiscal efficiency also sensitive to displacement rates
- ❑ Government financial analysis: other instruments may be more efficient & effective for price stabilisation (but not for growth etc)
- ❑ *Livelihood & growth analysis is critical*

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Livelihood / poverty / food security achievements: *Headline*



Livelihood / poverty / food security: immediate impacts of 2005/6 and 2006/7 subsidy & weather

Qualitative data:

- ❑ Improved household food security (no of meals, no of malnutrition cases, food stocks)
- ❑ Increased access to cash resulting in investments in e.g. livestock, school clothes
- ❑ Improved community and household relationships

Quantitative data

- ❑ Rural household's own subjective ranking of their economic well-being was 8% higher in 2007 than 2004
- ❑ Maize prices were lower in 06/07 than 05/06
- ❑ Median wage rates increased from MK100 to MK133 across the 05/06 and 06/07 years.

What is the counterfactual?

Separation of subsidy & weather effects?

Wider effects on non-beneficiaries?

How sustainable are these impacts?

Sustainability and livelihoods : breaking the low input – low output trap

Analyse complex processes and subsidy outcomes

- ❑ increased land & labour productivity, soil fertility maintenance
- ❑ increased grain availability, lower maize prices, higher wages & real incomes, stimulation of non-farm demand
- ❑ domestic supply & demand stimulation to diversify out of maize to other crops & non-farm goods & services

and their interactions across:

- ❑ different levels (households / local economies / national economy)
- ❑ different timeframes (short, medium, long term)
- ❑ different contexts (agro-ecological zones, years with good (poor), (un)evenly distributed rainfall)
- ❑ different actions / development objectives

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Livelihood and rural economy modelling

- ❑ Cluster analysis of IHS2 data to define households types within MVAC livelihood zones
- ❑ Household livelihood models for different household types in the two largest zones
 - Kasungu Lilongwe Plain (KAS)
 - Shire Highlands (SHI)
- ❑ Examine effects of different subsidy & other scenarios
 1. on recipient households, whose response affects
 2. wages and maize prices, which then affect
 3. recipient and non-recipient households
- ❑ Confirms interplay between the input subsidy, *ganyu*, maize prices and subsequent impacts on household livelihoods and well-being of recipients and non recipients
- ❑ Illustrative but informative results

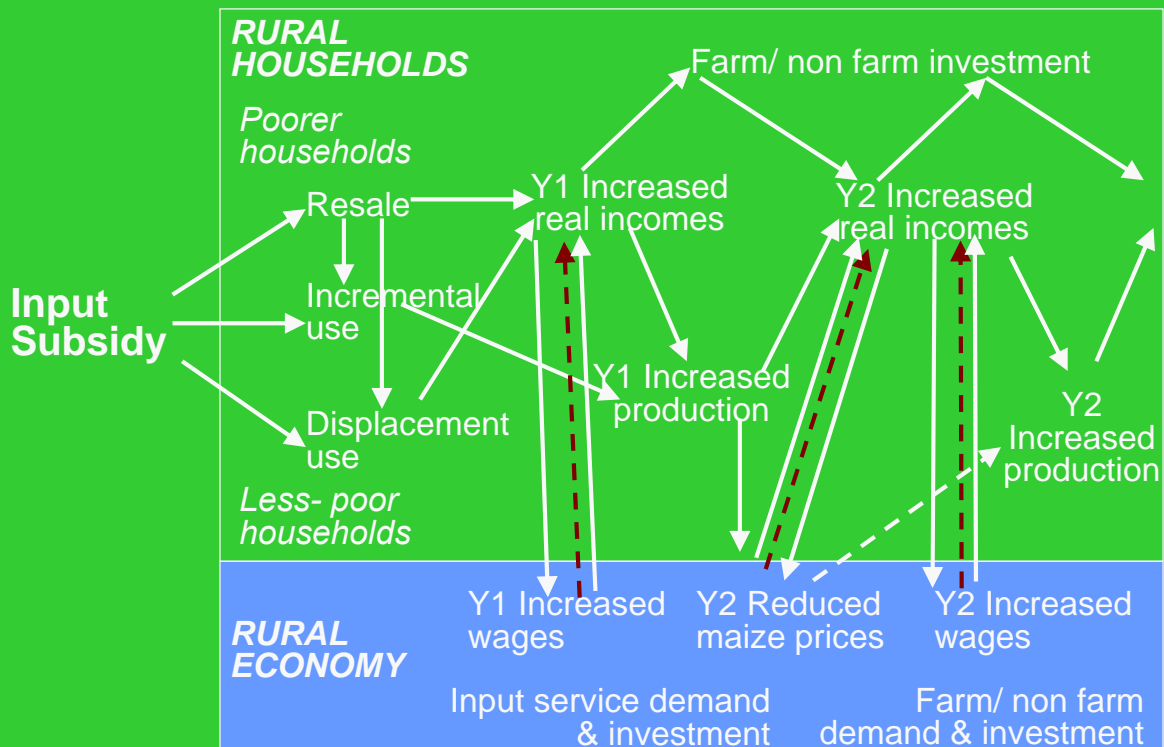
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Model results: comprehensive subsidy (2004 MK)

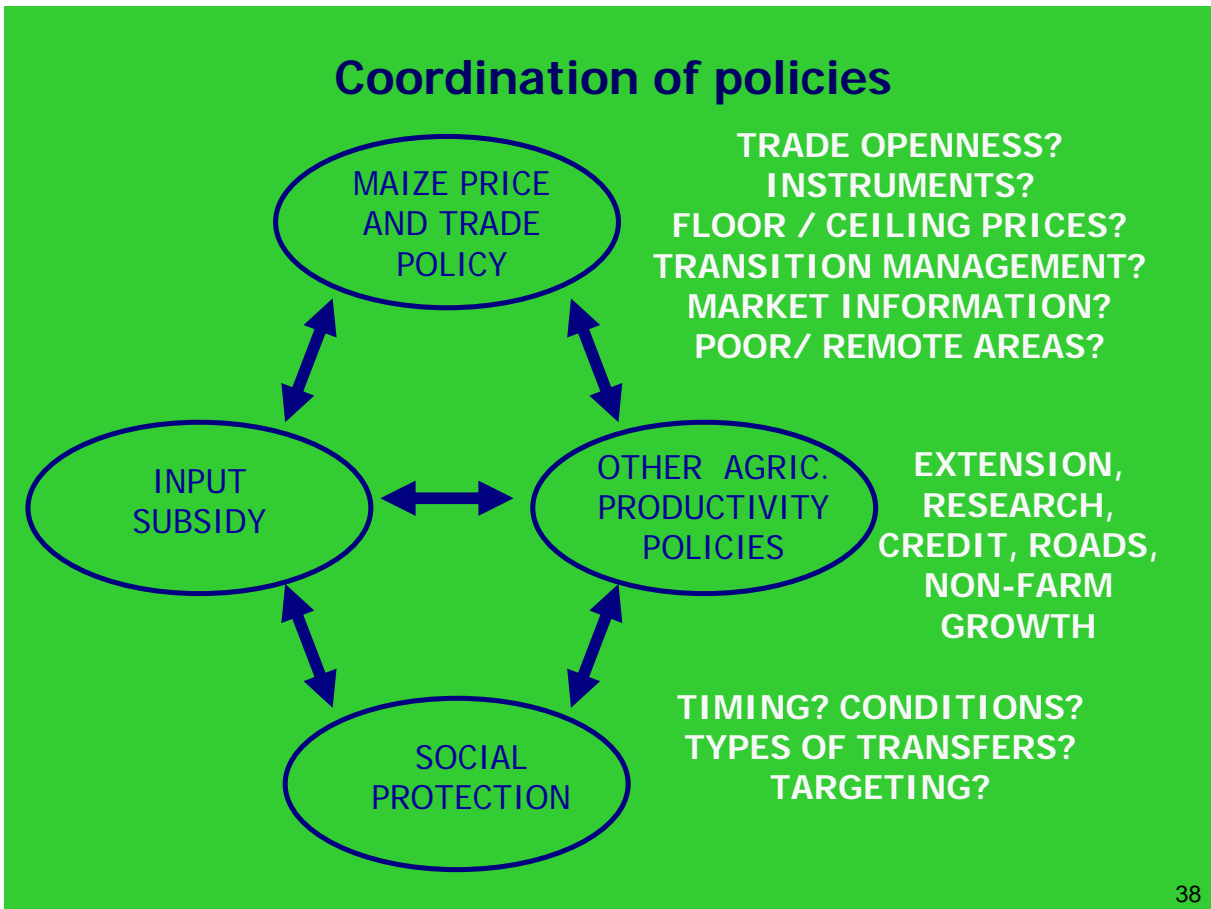
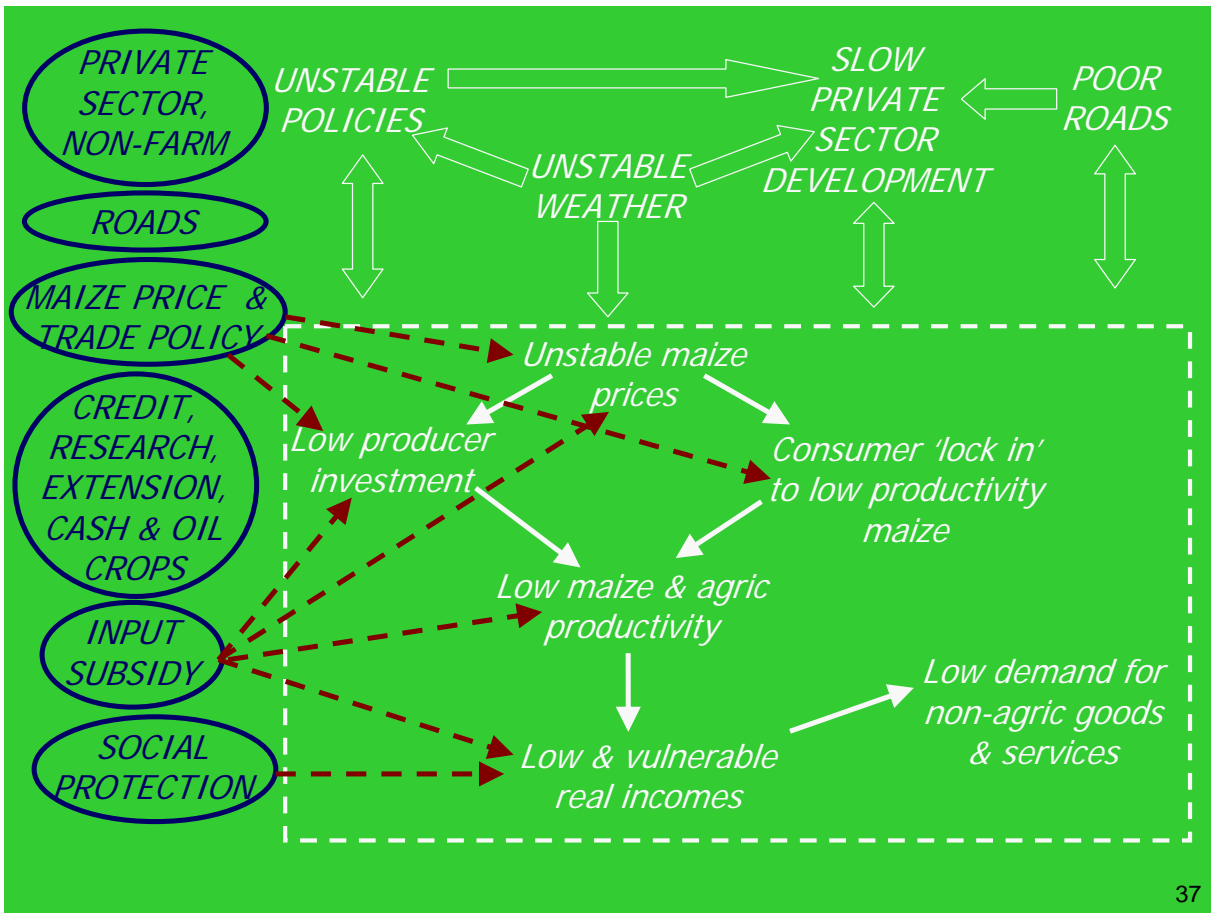
	KAS			SHI		
	Year 1 Subs	Year 2 No Sub	Year 2 Subs	Year 1 Subs	Year 2 No Sub	Year 2 Subs
Total subsidised Seed (MT)	1,482	0	1,482	754	0	754
Subsidised Fertiliser (MT N)	12,971	0	12,971	6,602	0	6,602
Wage change (% from base)	5%	20%	20%	11%	30%	30%
Maize price change (%)	0%	-26%	-26%	0%	-27%	-27%
Real net income change						
Target hh	5%	15%	16%	9%	16%	15%
All hh	2%	1%	2%	4%	3%	4%
Total cost / hhold (MK)	2,015	0	2,015	1,770	0	1,814
Total cost / target hhold (MK)	6,717	0	6,717	3,161	0	3,240
Total benefit / hhold (MK)	506	310	670	2,160	1,791	1,984
Benefit / target hhold (MK)	1,193	3,648	3,928	3,435	6,088	5,929

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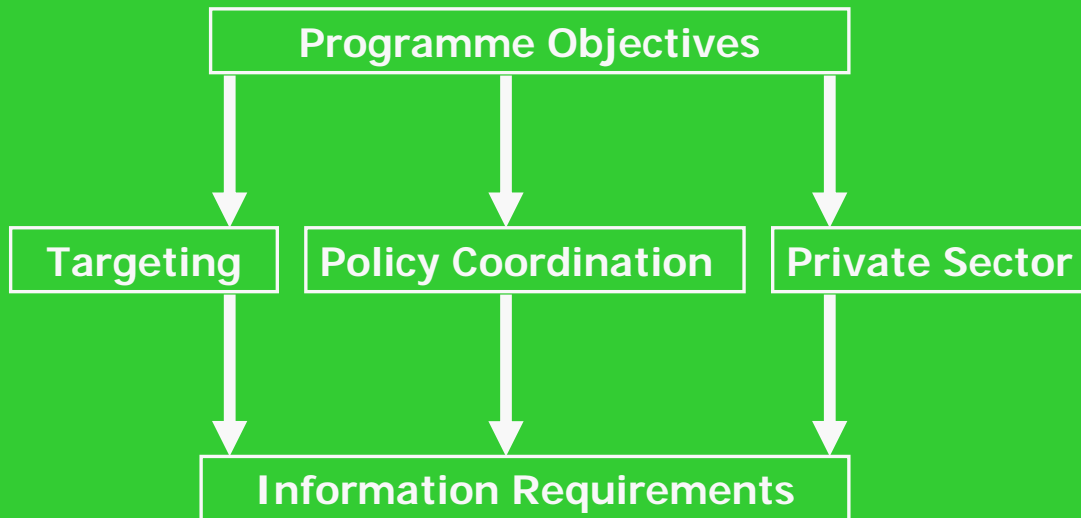
Changing subsidy impacts on households & markets



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Issues / Recommendations



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Issues / Recommendations (1) *Programme Objectives*

Issue:

Different stakeholders have different views of the objectives of the programme

Recommendation:

Establish a more comprehensive and consistent framework of programme objectives that:

- encompasses long-term food security, growth and poverty reduction
- resolves conflicting objectives
- supports target setting and budget allocations

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Issues / Recommendations (2)

Targeting

Issues:

- i) There are contradictions in targeting criteria
- ii) Geographical targeting was based on cultivated areas rather than poverty and vulnerability data

Recommendation:

Strengthen targeting strategy and criteria to enable:

- a more coherent / better balance between productive and poverty criteria; and
- more effective area targeting – based on numbers of poor farming households

Continue with voucher based programme (not clubs)

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Issues / Recommendations (3)

Policy coordination

Issue:

There are strong complementarities between input subsidies and other policies and programmes at both design and implementation level.

Recommendation:

Improved coordination between input subsidy and other programmes will maximise positive synergies and improve outcomes

Examples:

- Public works timing; types of transfers;
- Linking extension coverage and timing to input subsidy;
- Maize prices stability for producers and consumers

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Issues / Recommendations (4)

Private sector

Issue: The private sector can play a key role in delivery of input subsidies (and reduce the cost of the programme to government).

Recommendation: Ensure engagement of the private sector to reduce costs and promote business development via:

- consistent, timely & transparent planning & implementation
- private sector commitment to systems supporting integrity and performance
- commitment from all stakeholders to development of mutually beneficial 'transition strategy' for greater private sector involvement in input markets.
- reduction of government involvement in well served areas
- design of policies and programs to support private sector expansion to under-served areas and more effective use of independent agrodealers.

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Issues / Recommendations (5)

Information

Issue:

Improving targeting and policy coordination requires good information

Recommendation:

Establish systems to identify and ensure collation of required information

Examples:

- Smallholder agriculture: No of farm families, yields, storage losses, areas, input use, sales, wages
- District / livelihood zone info on poverty and vulnerability levels, assets etc
- National and regional markets (staple production, consumption, stocks, prices, regional trade flows; input marketing costs)

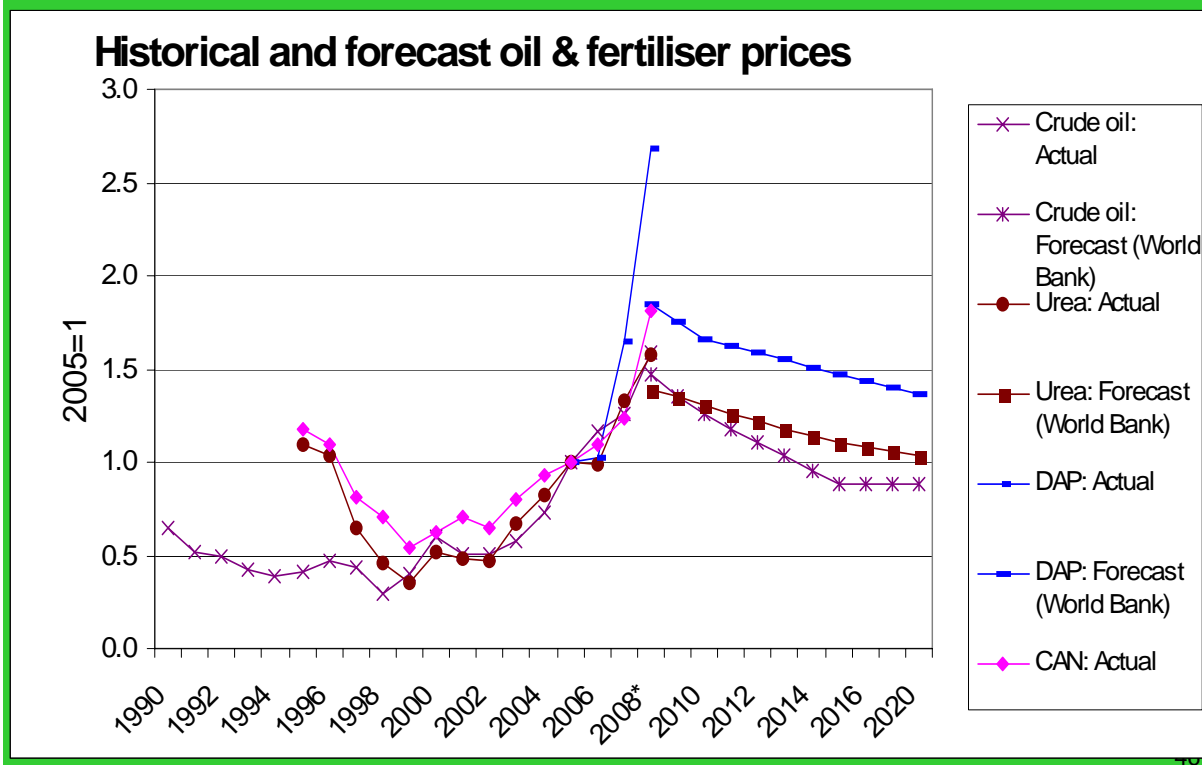
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Challenges

- ❑ International fertiliser prices
- ❑ Cost control
- ❑ International maize prices
- ❑ Climate change
- ❑ Displacement
- ❑ Targeting
- ❑ Timing
- ❑ Stability and transparency
- ❑ Fraud
- ❑ Exits & sustainability

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Challenges



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Historical and forecast international maize prices

