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**Work in Progress: Policy Analysis for Food Security, Poverty Reduction, and Rural Growth in Malawi.**

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**Introduction**

Following the relief response to the food crisis, policy attention in Malawi is now refocusing on means of achieving food security, poverty reduction, and rural economic growth. Unfortunately this is hampered by gaps in our understanding of the processes involved in achieving these goals in Malawi; lack of effective criteria for appraising the impacts of policy alternatives on policy goals; and consequent difficulties in developing consistent and holistic appraisals of these policy options. This briefing paper examines the relationships between these three policy goals and suggests use of a systematic set of policy impact criteria in policy analysis and appraisal. The paper draws on ongoing research <sup>2</sup> on problems and policies within poor rural economies and a recently developed set of powerful models of different farm households' behaviours within the Malawian rural economy. We do not attempt here to discuss the merits or demerits of specific policies.

**Key processes in food security, poverty reduction, and rural economic growth**

Table 1 sets out brief descriptions of policy goals and distinguishes between requirements for these goals to be achieved in the short/medium term and in the medium/long term. Key differences between these two time periods are that short/medium term policy has to work within the constraints imposed by current poverty and lack of development in rural areas, while at the same time seeking change. Thus market based approaches to food security do not work in Malawi today (as the current crisis has demonstrated), and they will not be effective without prior development of markets, with the broad based growth needed to support them <sup>3</sup>. Similarly poor people will not be able to climb out of poverty until the rural economy grows, offering better returns to their labour with higher real wages and stable food prices. Significant rural economic growth is not possible in the short term, and while policies promoting it need to be implemented immediately, poverty reduction and food security policies must recognise markets' limitations and provide alternative, non-market mechanisms promoting secure and low cost availability of and access to food. These mechanisms must, however, be designed to promote rather than undermine development of markets and wider rural growth. This is a critical issue in debates about safety nets, and targeting and delivery mechanisms. Two further, general points emerge from this: first the need for consistency and coordination of policies across different policy goals and time periods, and second the need for policies to take account of and address the context in which they must operate – not only the lack of market development in the rural economy, as discussed above, but also the historical context (affecting institutions and people's expectations and behaviour) and opportunities and constraints arising from governance, resources, infrastructure, health and education services and status, HIV/AIDS, gender relations, the environment and current activities in the rural economy.

**Table 1: Policies and Their Requirements<sup>4</sup>**

Policy Goals	Requirements for Short/Medium Term Achievement (Policy purpose)	Requirements for Medium/Long Term Achievement (Policy purpose)
<i>Food security</i> : Secure & affordable access to food	Increased food self-sufficiency (household & national) with <b>food delivery &amp;/or productivity enhancing</b> safety nets & humanitarian response	Increased household & national food market access (low & stable cost, secure, timely) through wider entitlements with (mainly) <b>market based</b> safety nets & humanitarian response
<i>Poverty reduction</i> : Real incomes of the poor increased & more secure, through low food costs, higher returns to labour, & safety nets.	Safety nets to increase/ secure real incomes & develop/ protect assets (see above)	Broad based growth with opportunities & wages for unskilled rural labour, low food prices, and safety net & humanitarian response as above
<i>Rural economic growth</i> : Increased levels of local economic activity, with stable income opportunities supporting poverty reduction & food security	N/A	Macro economic stability & low interest rates; growth in agric. & non agric. sectors tightening labour markets and raising real incomes with stable / affordable food prices.

A key policy question concerns the relative roles of farm and off farm activities in the rural economy and in the livelihoods of the poor. There is a growing body of evidence that off-own- farm activities account for a large proportion of rural incomes (we estimate about 60% on average in Malawi, and about 65% or more for poorer households<sup>5</sup>). The policy conclusions that follow from recognising this high proportion of off-own-farm income are not, however, straightforward.

- An immediate conclusion is that there is very limited potential for directly increasing the incomes of the poor through own-farm productivity increases (for example a 10% increase in own-farm income will only lead to a 3% increase in total income if farming only accounts for 30% of total income), while the scope for the poor expanding into new agricultural activities is limited by access to capital and land. There is therefore limited scope for poverty reduction through agricultural development aimed directly at poorer households: for these households both food security and poverty reduction are likely to be best achieved in the longer term by increasing returns to labour in existing and new off own-farm activities.
- Increased returns to labour in off-own-farm activities, however, depend critically upon agricultural development on *other* farms (of less poor smallholders):
  - During the cropping season (a critical time of year) the demand for hired labour (ganyu) by less poor smallholders makes up a significant proportion of demand in the labour market, affecting poor peoples' ability to find casual work and the price of that work
  - In the longer run, the development of the local, informal economy (which we estimate is responsible for around 50% of total off-own-farm labour demand) depends upon growth driven by higher local prices for locally produced tradables<sup>6</sup>, or increased productivity either for tradables or for non-tradables on which rural people spend a large share of their income. We estimate that 60-75% of these growth opportunities lie in smallholder agriculture (given the rural economy's current structure).
  - Food (principally maize) production affects food prices, and since food accounts for a major share of household expenditure for the poor (we estimate averages of 37% across the smallholder rural economy and 50% for poorer households) higher production by less poor farmers benefits the poor (in terms of higher incomes and increased food security) if it leads to lower food prices
- The potential importance of growth in poor households' own-farm productivity is also under-estimated by simple comparisons between own-farm and non-own-farm income shares.
  - The supply of unskilled ganyu labour into the labour market depends upon poorer households' use of labour on their own farms, so overall own-farm labour demand across all poorer households affects both their ability to find casual work and wages earned for that work
  - With unstable maize prices in thin maize markets and unstable local production, own production of staple foods makes an important contribution to food security for all households<sup>7</sup>
  - Their own-farm labour use in the cropping season can provide them with much higher returns than off-own-farm labour use

Two important distinctions emerge from this discussion regarding the importance of smallholder agricultural development as regards both the goals and instruments of policies promoting food security, poverty reduction and rural economic growth. First, growth is important in own-farm productivity of *both* poorer and less poor households, but these two types of own-farm growth contribute to the policy goals in different ways, face different constraints, and hence need different, but complimentary and coordinated, policies. Second, the roles of own-farm growth in poorer and less poor households change over time, and with wider economic, institutional and market development there should be a decline in the importance and contribution of own-farm activities of poorer households to income and food security. These observations are consistent with analysis of the role of agriculture in rapid and large scale poverty reduction in green revolution areas in Asia in the latter part of the 20<sup>th</sup> century<sup>8</sup>.

### **Criteria for policy appraisal**

This understanding of the processes involved in achieving rural poverty reduction, rural economic growth and improved food security allows us to identify criteria by which alternative policies and policy combinations should be appraised. These criteria are effectively listed in the different cells of Table 1, where (to use logical framework language) the last two columns (requirements for achievement of policy goals in the two time frames) may be seen as policy *purposes*. Critically, policies cannot be appraised solely by their cost-effectiveness in directly delivering food or income to households: impacts on labour and food markets must also be considered. While in the short - medium term these markets may not be the primary mechanisms for achieving policy goals, short/medium term policies must nevertheless promote rather than undermine longer term development of these markets, and take account of positive or negative second round effects from these markets. These may depend as much upon on the instruments of policy implementation as on the broader policy approach (for example delivery of targeted food subsidies through food for work vouchers redeemable through private traders will have a very different impact on food and labour markets as compared with targeted

distribution of free grain by NGOs or government). Appraisal must also take account of the constraints and opportunities facing particular poor and vulnerable groups and of the historical and institutional context in which policies are being implemented (as mentioned earlier, for example, policies promoting food security should not rely on market mechanisms if the necessary markets do not exist, are very weak, or are not accessible to target groups). They must also allow for effects of likely natural, economic or political shocks.

### Policy development

How should these criteria be applied?<sup>9</sup> Ideally policy alternatives and combinations should be compared systematically on all the major criteria, tracing through likely direct and indirect effects on food prices and on returns to labour in own-farm and off-own-farm activities under different scenarios. As noted earlier, these may need to take account of mechanisms of policy implementation within broad policy approaches. Combinations of policies may be needed for achievement of short and long term goals, and to ensure that different categories of rural people are not excluded. At its simplest such analysis may involve a table with qualitative indicators showing for each policy the direction (positive or negative) and broad magnitude of impact on each criterion. However where trade-offs occur between different policies, or for specific policies between different criteria, and where cost effectiveness and scale of investment in different policies need to be considered, then it may be helpful to use quantitative estimates of impact on different criteria. Relatively simple budgets may often be all that is available for estimating 'first round' policy effects. These however ignore substitution and income effects on household decision making and activities, effects which can be captured by farm-household models. However the importance of wage rates and food prices to the real incomes of the poor also demands that individual household responses need to be integrated into wider models that relate markets across the rural economy, tracing out the second round effects through (particularly) labour and grain markets. The responses of these markets may significantly affect the food security and poverty impacts of both short/medium and medium/long term policies.

These issues are illustrated in Table 2 which examines impacts estimated by the different analytical methods discussed above, using targeted maize input distribution as a sample policy. In this particular example the estimated increase in income per target household is similar for analyses using a simple budget and a set of farm household models linked by labour and maize markets, but the mechanism by which this is achieved is shown to be quite different. In the first case a much larger increase in direct maize production is predicted (as a result of greater use of fertiliser), in the latter case the extra income is achieved through a combination of greater input use, a shift of labour to own-farm production, higher returns to off-own-farm labour, and lower maize purchase prices (although this also reduces the value of incremental maize production). Poverty estimates using the models with labour and maize markets then take account of income and activity changes across all households in the rural economy, allowing for gains and losses to different household types as result of wage and maize price changes, and for their cropping and other responses interacting with these changes<sup>10</sup>.

Table 2. Appraisals of Impacts of Targeted Maize Input Distribution Using Different Analytical Methods<sup>11</sup>

Markets modelled	Qualitative Assessment	Simple Budget	Farm Household Models			
		none	none	labour	maize	labour & maize
Cost (mill MK) (exc transport, admin)	+	128	128	128	128	
Wage rate (change from base)	+	n/a	..	+2%	..	+2%
Maize price (change from base)	-	n/a	..	..	-2%	-2%
Poverty head count (base = 64%)	-	n/a	63.5%	63.2%	63.3%	62.5%
Ultrapoverty count (base = 33%)	-	n/a	31.7%	31.3%	31.4%	31.0%
Incremental smallholder maize production (%)	+	7%	2%	3%	1%	2%
Increase in real income (MK/target hhold)	+	581	262	361	328	484
Increase in maize consumption (target hholds)	+	n/a	3.6%	5.7%	3.6%	5.9%

### Conclusions

The interactions between policies promoting food security, poverty reduction, and rural economic growth in the short-medium and medium-long term are complex and need explicit attention in the development of policy following the 2002/3 food crisis. Clear and comprehensive criteria should be applied to take account of this in policy development and appraisal, allowing for interactions between household activities, between different households, between agricultural and non-agricultural growth, between different policy goals, and between different time frames. This in turn requires wider recognition of these issues and wider use of informal and formal analytical methods that take account of them.

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- <sup>2</sup> *Institutions and Economic Policies for Pro-poor Agricultural Growth*, Project R7989 funded by the Social Science Research Unit of the UK Department for International Development (DFID) and (for work on Malawi) involving Imperial College London, Bunda College and the International Food Policy Research Institute. The findings, interpretations and conclusions expressed in this paper are entirely those of the authors and should not be attributed to the Department for International Development, which does not guarantee their accuracy and can accept no responsibility for any consequences of their use. We acknowledge contributions made to the analysis in this paper by the research team and by Ian Kumwenda, but remain responsible for any errors or omissions. For further information on or outputs from the project see [www.wye.imperial.ac.uk/AgEcon/ADU/research/projects/ppag](http://www.wye.imperial.ac.uk/AgEcon/ADU/research/projects/ppag).
- <sup>3</sup> Dorward A. and Kydd J., (2002) *The Malawi 2002 Food Crisis: The Rural Development Challenge*. Paper presented at 'Malawi after Banda: perspectives in a regional African context', a conference to mark the retirement of John McCracken, 4-5<sup>th</sup> September, Centre of Commonwealth Studies, University of Stirling [www.wye.imperial.ac.uk/AgEcon/ADU/publications](http://www.wye.imperial.ac.uk/AgEcon/ADU/publications).
- <sup>4</sup> Discussion in this paper focuses on economic aspects of poverty: development of education, health, and infrastructure are not explicitly considered apart from the direct effects of ill-health (eg HIV/AIDS) and poor infrastructure on households' and national economic activities and their outputs.
- <sup>5</sup> Dorward A. (in preparation) *Modelling poor farm household livelihoods in Malawi: Lessons for Policy*. Centre for Development and Poverty Reduction, Imperial College London, Wye Campus
- <sup>6</sup> Tradables are goods and services that may be imported or exported to or from the area. Although these terms are often associated with international trade, we apply them here to *intranational* trade between rural and urban sectors.
- <sup>7</sup> Our discussion focuses here on staple food security: own production of vegetables and livestock may also allow improved access to and consumption of protein and micro nutrients.
- <sup>8</sup> See for example Hazell P and Rosenzweig M (2000) *Rural Asia: Beyond the Green Revolution* OUP/ ADB
- <sup>9</sup> This paper concentrates on policy analysis tools for using the criteria discussed above. We do not attempt to address the processes by which policy should be developed (see O&M Development Consulting (2002) *National Food Security Policy: Literature Review*, Draft Final Report).
- <sup>10</sup> Market impacts will take some time to work through, and the results presented here assume longer term adjustment and equilibrium within the rural economy, including modified market expectations: it is also possible to model swings in prices as the rural economy and expectations adjust to changes in supply, demand and prices.
- <sup>11</sup> Cost and yield response assumptions are identical for the different appraisal methods. All estimates are drawn from household and rural economy models using 1997/98 season prices, for 1.2 million households in maize and tobacco growing areas (i.e. excluding Lakeshore areas, the Upper and Lower Shire Valley, and highland areas). Model estimates are calculated by aggregated results from models of 7 different household types. Poverty estimates are derived from modelling against IHS poverty lines. Under the targeted maize inputs scenario, inputs for 0.1 ha of 'improved maize' are assumed to be distributed to a little over 600,000 households in the two poorest household types. In the interests of brevity, only a restricted set of impact criteria are included. Model estimates provide useful broad indicators of likely policy impacts, but different initial conditions will lead to different household responses and policy impacts. For further information on model construction, data sources, and validation see Dorward A. (in preparation) *Modelling Farm Household Livelihoods in Malawi: Lessons for Policy*. Centre for Development and Poverty Reduction, Imperial College London, Wye Campus (contact Andrew Dorward at [A.Dorward@imperial.ac.uk](mailto:A.Dorward@imperial.ac.uk)). Interactions of the rural economy with the wider national, regional and global economies are not explicitly allowed for in these simulations: these interactions are being explored in ongoing work involving CGE models being developed at IFPRI.