

Institutions and Economic Policies for Pro-Poor Agricultural Growth

DFID Social Science Research Unit, Project 7989

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1 Background and Objectives

Sub Saharan Africa and parts of South Asia are likely to hold large numbers of very poor rural people for the foreseeable future. Despite a pre-eminent role for agricultural growth in poverty reduction in poor agrarian economies in the past, such growth today faces new difficulties. Many of these difficulties are endogenous to today's poor rural areas, others result from broader processes of global change, but some may be due to the current development orthodoxy that argues for internal market liberalisation, state withdrawal and trade-led growth to promote pro-poor growth in poor countries. However, policies building on this orthodoxy sit uneasily with disappointing social and economic progress in rural areas of many liberalising countries, particularly in Africa. They have also been associated with many donors and governments questioning the value of investments in agriculture, following perceived failures of earlier agriculture-led development, recognition of the importance of non-farm activities in rural livelihoods, and, following liberalisation policies, a reduced portfolio of potential agricultural activities in which to invest.

The objectives of this study were to gain insights into the components of pro-poor agricultural growth (PPAG) and policies to promote such growth. The research aimed to

- enhance understanding of the role of institutional, micro-economic, macro-economic, and international factors in determining the scope for PPAG;
- identify appropriate policy initiatives to address related constraints, and
- develop policy tools to support PPAG.

The work focussed on research questions regarding first, the validity of the basic hypothesis regarding differences between issues facing the poor today and those facing their Asian counterparts in the latter part of the 20th century, and second the growth and poverty impacts of different types of policy induced change.

2 Methods

Research was conducted in three overlapping and interactive phases: literature review, country-focused empirical analysis, and synthesis.

The *review phase* sought to further investigate and develop the basic hypothesis of the project, that current arguments for market liberalisation and state withdrawal are not appropriate in poor agrarian economies prior to an agricultural transformation. This involved a wide ranging literature review examining characteristics of historical pro-poor agricultural growth, conditions necessary for such growth, and the impact and development pathways of such growth (Dorward *et al.* forthcoming). Specific reviews of three case study countries (Malawi, Zimbabwe and India) identified particular issues for subsequent economy wide and micro-economic analysis (Dorward and Kydd 2002; Poulton *et al.* 2002; Smith and Urey 2002)

The *country-focused empirical analysis* adopted two different approaches. Analysis for Malawi and Zimbabwe examined the effects of different types of change on different categories of poor people, integrating historical analysis with various integrated and dis-aggregated empirical models. In both countries a farm-household typology was developed prior to construction of farm-household livelihood models for agro-ecological zones where most of the poor are concentrated. The farm-household models were aggregated into an informal rural economy model for these zones. These models were used to provide insights into the livelihoods of poor and less poor farm household types, and to relate these livelihoods to the structure and behaviour of the informal rural economy . For Malawi the modelling was taken further, integrating some of the insights gained from the detailed farm-household models with a dynamic CGE model which allowed policy implementation and impacts to be tracked over several years.

For India, different methods were used, extending earlier econometric work on the effects of investments and agro-ecological conditions on agricultural growth and rural poverty over the last 40 years. New variables were added to investigate the effects of various market support interventions (in financial, input and output markets) on poverty and growth.

3 Findings

The general literature review examining global experience with pro-poor agricultural growth revealed a strong association (a) between poverty reduction and smallholder agricultural growth, and (b) between 20th century agricultural transformations and active state intervention in agricultural input, output and financial markets (see Dorward *et al.*, forthcoming and related working papers). This, together with insights from the India, Malawi and Zimbabwe country papers, supported the basic hypothesis of the project regarding market liberalisation and state withdrawal, and led to the development of a clearer understanding of the specific contribution of state intervention in ‘kick starting’ thin and poorly developed markets (see figure 1, from Dorward *et al.*, forthcoming). This suggests that following prior investment in agricultural technology and infrastructural development in phase 1 there will be strong growth and poverty reduction benefits from effective state intervention in markets in poor agrarian economies in phase 2. The benefits of agricultural market intervention would then be expected to fall as the economy grows and moves into phase 3, as markets work more effectively and agriculture becomes relatively less important.

The review of Indian experience (Smith and Urey, 2002) showed that the agricultural transformation provided by the Green Revolution (GR) from the mid 1960s led to reduction in poverty. This followed years of volatility in food production and prices, when poverty and import dependence were rising. Poverty reduction was achieved by cost reducing technological change in farming that sustained the growth rate for agriculture above that for population, kept food prices low and stimulated rapid growth in both farm and non-farm employment. This was lagged, as adoption of the technology spread from larger to smaller farms and from favoured irrigated areas in the north west to other regions, but became sufficiently broad based to have significant and sustained impact on measures of poverty at the all-India level.

This model for pro-poor agricultural growth was achieved during the 1970s and 1980s despite a continued anti-agricultural bias in macro policy. Sector price incentives were marginally but sufficiently favourable to facilitate initial adoption of the GR technological package, and

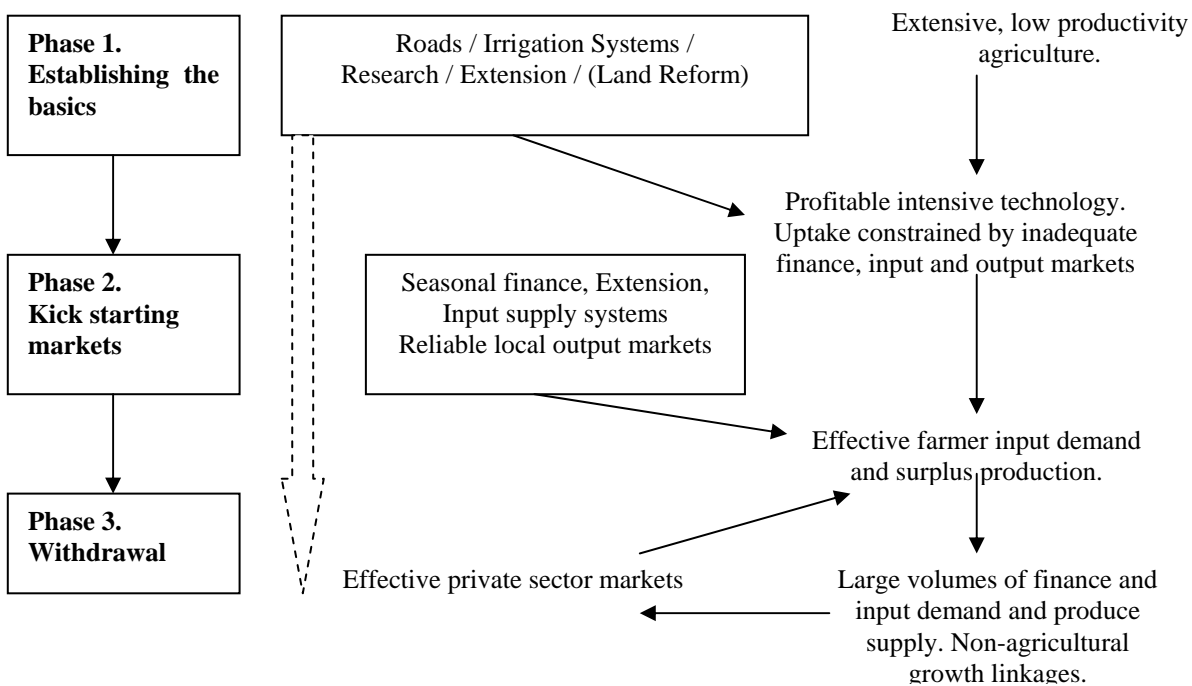


Figure 1 Policy phases to support agricultural transformation in favoured areas

productivity gains then more than compensated farmers for later relative decline in output prices, encouraging continued use of the modern inputs. Success also stemmed from the institutional and structural shifts that preceded and accompanied the GR. Land reforms, irrigation expansion and investment in agricultural research were important pre-conditions, and continued public expenditure in agricultural research and extension, rural roads, and state provision in input distribution and output procurement were critical to sustain it. Rural credit provision, though costly and inefficient, also provided liquidity to finance seasonal working capital and farm investment, as well as non-farm employment growth. Public intervention to force commercial banks to open branches and operate in high cost and risky rural areas was a key feature. Input subsidies partially offset declining output prices in the 1980s, but were not key determinants of technology adoption and became damaging when they crowded out capital investment in research, infrastructure and human capital as fiscal constraints began to bite under structural adjustment reforms.

The absence of greater poverty decline in the 1970s and 1980s was the result of too little rather than too much success of the GR, although it also tended to widen inequity both between households and regions. GR impacts were confined initially to wheat and rice in areas with good water control from established surface irrigation, but it was the spread of the GR to less favoured areas in the second phase that brought the biggest gains in poverty reduction, by reaching large numbers of poor people. However, great variation remains between favoured and less favoured areas, and large concentrations of hard core poverty remain in the poorest states.

The reviews of the abortive green revolutions in Malawi and Zimbabwe also emphasised the importance of the agricultural sector for livelihoods and poverty reduction, and of labour demanding technology and supportive institutional interventions in agriculture. Despite initial successes, these supportive institutions were, however, very costly and increasingly ineffective in the 1990s, and were rendered unsustainable by growing internal and external difficulties. Given the long periods of agricultural growth needed for significant poverty reduction in Asia, difficulties in sustaining supportive institutions at reasonable cost under more difficult institutional, agro-ecological and economic conditions present a major challenge in sub Saharan Africa. Positive interactions between rural and urban areas were important in both countries, with urban areas providing important remittances to rural areas, which in return should provide food and some security to urban households.

The Zimbabwe review (Poulton *et al*, 2002) further highlighted the challenges facing drier areas where new technologies do not offer productivity gains sufficient to drive rapid agricultural growth. It also drew attention to the way that benefits of growth were limited to more favoured agro-ecological areas which tend also to have better road and market access. Growth benefits in these areas tended to bypass less favoured and more isolated areas where many of the poor live, as these areas did not gain from reduced food prices nor from increased access and returns to employment. However, this lack of impact in low potential areas needs to be evaluated in the context of the Indian experience of a lagged spread of benefits to poorer households and areas. Livestock play an important role in many of these areas, in both crop production and as assets that provide some protection against the vagaries of uncertain and marginal cropping systems.

Dorward and Kydd, 2002, developed from the Malawian analysis the critical concept of coordination risks and low-level equilibria as constraints to agricultural development. They highlighted the state's historical role in providing coordination and taking on coordination risks itself where undeveloped markets cannot coordinate the different investments needed for market led growth (input traders, financiers, farmers and output traders all need to make investments whose returns depend upon coordinated and complementary investments by other players). Recognition of African states' failures in fulfilling this role mean that simple state withdrawal and market liberalisation will not on their own enable agricultural growth in poor rural areas with undeveloped markets: new mechanisms for coordination must be found, with different roles for the

state and for other interested stakeholders, such as farmer organisations and NGOs. This becomes a central challenge for pro-poor agricultural growth.

The empirical work in India (Fan, Thorat and Rao, 2003) then provided strong evidence supporting the central hypothesis developed in the project and set out earlier in figure 1. Table 1 below summarises the main econometric results from the Indian study. These show, over four decades, persistently high benefits from investment in roads, initially high but then declining impacts from investments in fertiliser, power and credit subsidies and in agricultural R&D, and initially low but then rising impacts from investments in education. These results demand a fundamental reassessment of current policies espousing state withdrawal from markets in poor agrarian economies. However, in the face of widespread state failure in many poor agrarian economies today, particularly in Africa, new thinking is urgently needed to find alternative ways of ‘kick starting’ markets.

Table 1 Growth and Poverty Impacts of Government Investments in India

	Returns in Agricultural GDP (Rps per Rps Spending)				Cost per poor person lifted above the poverty line (current UK£)			
	1960s	1970s	1980s	1990s	1960s	1970s	1980s	1990s
Roads	3.07	3.48	2.92	4.29	58	18	19	28
Education	1.20	1.49	0.95	1.26	1,026	103	79	87
Irrigation								
Investment	0.51	1.06	1.02	0.07	317	107	115	2,222
Irrigation Subsidies	0.69	1.20	-1.18	0.24	234	94	n.s	556
Fertiliser Subsidies	4.51	1.26	0.88	-0.65	36	89	133	n.s
Power Subsidies	2.26	1.29	0.30	0.07	72	87	392	1,905
Credit Subsidies	2.05	0.62	0.08	-0.20	79	183	1,481	n.s
HYV Agric. R&D	3.11	1.89	0.39	n.s.	52	60	303	n.s

The Malawi and Zimbabwe empirical work developed an ambitious and innovative set of farm-household models to analyse the structure of different rural livelihoods and to simulate policy impacts on livelihoods, rural growth and poverty. For Malawi the household models were built into a model of the informal rural economy which was then used to generate parameters to describe the impacts of change on a dynamic economy wide (CGE) model. The following policy points are highlighted:

- Growth that raises real wage rates is critical to sustained poverty reduction, and hence poor people generally benefit from measures that reduce market labour supply, raise market labour demand or stimulate grain supply and reduce grain prices. Smallholder agriculture plays a dominant role in all these markets even though it accounts for less than 50% of rural incomes.
- Where agro-ecological conditions can support substantial agricultural productivity increases with currently available labour demanding technologies, smallholder agriculture is the sector best placed to initially drive pro-poor growth but this requires large productivity increases from labour demanding technical change.
- Both own-farm and non-farm activities and the agricultural and non-agricultural sectors are critical to the welfare of the rural poor and to pro-poor growth¹. Longer term tradable non-agricultural growth drivers are also needed if sustained poverty reduction is to be achieved, and this requires major structural change in the economy.

¹ Dorward, 2003, provides a detailed description of complex farm-non farm interactions in the rural economy

- Short to medium term growth in smallholder agriculture can benefit very poor people, and there are important potential synergies between welfare support and growth, as welfare support can ease short term seasonal capital constraints on poor households' agricultural productivity.
- Substantial numbers of households not in a position to take advantage of economic growth opportunities (through sickness, lack of labour, etc) need welfare support
- Substantial and long term external finance is needed to fund investments for growth and welfare support
- Good governance, good macro-economic management, and low real interest rates are critical to pro-poor economic growth
- Where agro-ecological conditions can support substantial and labour demanding agricultural productivity increases, there can be major potential pro-poor growth benefits from reduced transaction costs in agricultural output markets and from increased smallholder household liquidity.
- Market intervention policies that stimulate the development of otherwise thin food grain and input markets can stimulate pro-poor growth if the poor are protected by countervailing welfare support to compensate them from higher food prices, and if practical problems in the implementation of these policies can be addressed.

Methodological lessons for policy analysis include the following:

- Labour and maize market interactions and impacts are critical to processes of pro-poor growth but are easily overlooked by analysis that focuses on livelihood changes at the household level: (simple) partial equilibrium considerations must be included in policy analysis.
- The importance of partial (and general) equilibrium analysis increases with larger scale interventions, and interventions which tighten labour markets will have greater spillover effects and leverage when implemented on a large scale.
- As indicated above, partial and general equilibrium analysis are critically important in considering policy impacts on poverty through wage and staple food price changes, but these need to be based on realistic disaggregated models of different households' behaviour and activities within the rural economy to capture impacts of, for example, seasonal constraints (leading in some cases to perverse labour and maize supply responses, for example) and of labour demanding technology and crops. Policy interventions to relieve seasonal constraints and promote labour demanding technology and crops should play an important role in pro-poor rural growth.
- There is a current dearth of information on wage rates, on the workings of rural labour markets, and on the rural non-farm economy. This is an important information gap that needs to be addressed urgently.
- HIV/AIDS impacts operate differentially and at all levels of the economy, affecting initially vulnerable households the most, and depressing both livelihood opportunities to the poor in the rural economy and affected households' abilities to take advantage of such opportunities that do exist.
- Appropriate pro-poor policy interventions vary with stages of growth (current levels of agricultural productivity, non-agricultural activity, market development, and technical productivity potential) and hence must be location specific.

Overall, therefore, the project has made a substantial contribution to our understanding of pro-poor agricultural growth, of policies needed to promote it, and of analytical methods to use in policy analysis by

1. developing a substantial body of theoretical, historical and empirical evidence of the need for market interventions to 'kick start' markets in the early stages of agrarian development
2. analysing the stages of the GR in India and identifying key contributions to growth and poverty reduction that can be made by appropriately timed and phased state interventions.
3. providing clear empirical evidence from Malawi and Zimbabwe of the importance and roles of smallholder agriculture in pro-poor growth in poor rural economies even where agricultural income may directly account for less than 50% of rural incomes
4. re-iterating the crucial importance of tightening labour markets and food prices for pro-poor growth
5. developing, applying and learning from a novel set of farm-household, (partial equilibrium) rural economy, and CGE models

Points 1 to 4 present a major challenge to current development policies which have not given due recognition to the importance of agricultural development for poverty reduction and food security, have failed to address critical market failure problems inhibiting agricultural development in poor rural areas, and have often over-emphasised household livelihood development at the expense of attention to promotion of processes that benefit the poor by tightening labour markets and driving up real wages.

4 Dissemination

The project has used a range of channels for dissemination of findings. Much of the dissemination still has to be done, as empirical findings have only become available at the end of the project. The following dissemination activities were undertaken:

Project website (www.wye.ic.ac.uk/AgEcon/ADU/projects/ppag/): with downloadable papers posted both on the project website and the Wye Development papers page (www.wye.ic.ac.uk/AgEcon/ADU/publications) as they have become available (the latter generates a steady flow of correspondence from a wide readership).

Use of various dissemination networks:

- A research highlight on 'Agricultural growth, poverty and institutions: rethinking policy' was carried by ID21 towards the end of 2002, with literature review findings; (<http://www.id21.org/zinter/id21zinter.exe?a=f&w=dorward&submit.x=37&submit.y=10>)
- SARPN (Southern Africa Regional Poverty Network) carried various project related papers in July 2002, prior to the Johannesburg summit, and more recently; (<http://www.sarpn.org.za/>)
- A number of papers have been posted to the Development Gateway, Poverty network (<http://www.developmentgateway.org/>)
- the work has fed directly into ODI's Southern Africa Food Security Forum (funded by DFID) with Dorward and Poulton writing a paper and moderating the e-conference on 'The Role of Market Based Economic Development in Strengthening Food Security', and the website carrying a project briefing paper on Malawi. (<http://www.odi.org.uk/Food-Security-Forum/Index.html>)

Conference and seminar presentations: Presentations have been favourably received at the Agricultural Economics Society Conference, the University of Bonn, Michigan State University, University of Stirling, Institute of Development Studies (Sussex), University of Ghent, University of Reading, University of Zimbabwe, University of Malawi, Overseas Development Institute, USAID, UNCTAD, OECD (Paris), DFID Africa Policy Department (May 2002), and the World Bank.

In country policy workshop: Two workshops were held in Malawi in March 2003, in Lilongwe and Blantyre, to discuss findings and their policy implications with government, donor and NGO policy makers. A short workshop was held in Zimbabwe to discuss the Zimbabwe analysis with university staff.

Briefing paper: A short policy briefing paper was distributed widely in the UK and Malawi in February 2004, to contribute to the post-crisis debate on development and food security.

International Development Committee: A submission was made to the International Development Committee in its enquiry into the Southern Africa Food Crisis, with oral evidence to the Committee. Project reports were cited extensively in the Committee report.

Distribution of working papers: Literature review papers were distributed widely using an electronic distribution list.

Journal articles: By the end of June three journal articles had been submitted, and one of these accepted for publication (in *World Development*).

Two members of the project team are currently drawing extensively on project results in work with two NGOs (FARMAfrica and Harvest Help) drawing attention to the importance of smallholder agriculture for poverty reduction in sub Saharan Africa and outlining the need for policy changes to support pro-poor agricultural growth.

5 List of Publications

Project reports and working papers:

Dorward, A., Kydd, J., Morrison, J. and Urey I (2002) *A Policy Agenda for Pro-Poor Agricultural Growth*,

Smith, L. and Urey, I. (2002). *Institutions and economic policies for pro-poor agricultural growth: India literature review*.

Poulton, C., Davies, R., Matshe, I. and Urey, I. (2002). *A review of Zimbabwe's agricultural economic policies: 1980 - 2000*.

Dorward, A. (2002) *A Typology of Malawian Rural Households*.

Poulton, C. (2002). *Derivation of the Zimbabwe Communal Household Typology, 1996*

Dorward, A. and J. Kydd, (2003) *Policy Analysis for Food Security, Poverty Reduction, and Rural Growth in Malawi, Work in Progress*.

Fan, S., Thorat, S. and Rao, N. (2003). *Investment, Subsidies, and Pro-poor Growth in Rural India*

Dorward, A. R. (2003). *Modelling poor farm-household livelihoods in Malawi: lessons for pro-poor policy*.

Poulton, C. and Dorward, A. R. (2003). *Modelling poor farm household livelihoods in Zimbabwe*.

Wobst, P., Lofgren, H., Tchale, H., Morrison, J.A. (2003) *CGE modelling of Pro-Poor Development Strategies for Malawi: An Economy Wide Analysis of Alternative Policy Scenarios*

Dorward, A., Wobst, P., Lofgren, H., Tchale, H. and Morrison, J. (2003). *Modelling pro-poor agricultural growth strategies in Malawi: lessons for policy and analysis.*

Paper presentations emerging from or related to project activities:

Kydd, J., A. Dorward and C. Poulton (2002) *Institutional Dimensions of Trade Liberalisation and Poverty*. Paper presented at OECD Global Forum on Agriculture, meeting on Agricultural Trade Reform, Adjustment and Poverty, 23/24th May 2002, Paris.

Dorward, A., Kydd, J., Morrison, J. and Urey I (2002) *A Policy Agenda for Pro-Poor Agricultural Growth*, presented at AES Conference, April 2002

Dorward, A. and J. Kydd, (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, 4-5th September, Centre of Commonwealth Studies, University of Stirling

Dorward, A. R. (2003). *Modelling farm-household livelihoods in Malawi: Methodological lessons for pro-poor policy analysis* Paper presented at the Preparatory Meeting of the OECD Global Forum on Agriculture: Agricultural Policies in Developing Countries, the Scope for Using Disaggregated Analysis, Paris, May 19th 2003.

Powerpoint presentations:

Kydd, J., A. Dorward, J. Morrison and G. Cadisch (2002) *The Role of Agriculture in Pro-Poor Growth in sub Saharan Africa* Presented at DFID Africa Policy Department, May 2002

Dorward, A. and J. Kydd, (2002) *The Malawi 2002 Food Crisis: The Rural Development Challenge* Presented at Overseas Development Institute Seminar on the Southern Africa Humanitarian Crisis, July 2002

Dorward, A. R. (2003). *Modelling poor farm-household livelihoods in Malawi: lessons for pro-poor policy* Presented at University of Bonn, Institute of Development Studies (Sussex), University of Reading, University of Malawi

Dorward, A. and J. Kydd, (2003) *Implications of market and coordination failures for rural development in least developed countries*. Presented at World Bank, Michigan State University, UNCTAD (May 2003)

Poulton, C. and Dorward, A. R. (2003). *Modelling poor farm household livelihoods in Zimbabwe* University of Zimbabwe,

Other presentations/ papers:

Kydd, J. G., Dorward, A. and Vaughan, M. (2002). *The Humanitarian Crisis in Southern Africa: Malawi*. Submission to the International Development Committee, October 2002.

Oral evidence to the International Development Committee, 14th January 2003

Journal submissions to date:

Dorward, A. R., Kydd, J. G., Morrison, J. A. and Urey, I. (forthcoming). *A Policy Agenda for Pro-Poor Agricultural Growth*. accepted by World Development

Dorward, A. and J. Kydd, *The Malawi 2002 Food Crisis: The Rural Development Challenge*, submitted to Journal of Modern African Studies (July 2003)

Dorward, A., J. Kydd, J. Morrison, and C. Poulton *'Institutions for Markets' or Markets as Institutions: Theory, Praxis and Policy in Institutional Development* Submitted to Development and Change (also accepted as poster paper, International Association of Agricultural Economists conference in Durban in August 2003).

ID21 Highlights:

Agricultural growth, poverty and institutions: rethinking policy; December 2002

Postgraduate Teaching:

Findings from the project have already started to feed into MSc teaching at Imperial College (e.g. in the 2002/3 academic year), through readings, discussions and lecture contents.