

Agricultural Liberalisation in sub Saharan Africa¹

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Andrew Dorward, Jonathan Kydd, Colin Poulton and Michael Stockbridge

With Julien Cadot, Ephraim Chirwa, Alex Duncan, Manda Keita, Marjan Meganck,
Ramatu Al Hassan, Ballard Zulu

Centre for Development and Poverty Reduction
Department of Agricultural Sciences
Imperial College London

EXECUTIVE SUMMARY

This report presents the findings and conclusions from a desk study on the impacts of agricultural liberalisation in sub Saharan Africa (SSA). The report provides a theoretical examination of the difficulties facing smallholder agricultural development, a review of policy change and outcomes in SSA over the last 50 years or so, an examination of commodity and country case studies, and conclusions from this analysis for the policy approaches that are appropriate for the many challenges facing smallholder agriculture in the region today.

Smallholder agricultural development plays a critical role in poverty reduction in SSA. However, the performance of SSA's agricultural sector over the last 30 years has been very disappointing. SSA agriculture needs a process of 'sustainable intensification' with increased marketed production from greater use of purchased inputs but it faces many challenges, from difficult agro-ecological and geographical conditions, difficult global economic conditions, and difficult political and historical conditions.

Poor rural areas in poor economies are characterised by low total and monetary incomes for most people, a poorly developed and narrow monetary economy, and markets which are relatively 'thin' (with small volumes traded) and prone to large seasonal variability in demand and supply. These conditions normally coexist with poor roads and telecommunications; poor information (on prices, new technologies, and potential contracting partners); difficulties in enforcing impersonal contracts, and weakly constrained rent seeking behaviour by politicians, bureaucrats, criminals and the private sector.

These conditions pose particular problems for the supply chain development needed for agricultural intensification, as such development requires significant and simultaneous investments by new players entering the market, and these

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investments carry high risks of transaction failure and high transaction costs involved in obtaining protection against such risk. These risks and costs can be considered in terms of rent seeking, coordination, and opportunism: together they can lock poor rural areas into a 'low level equilibrium trap' by removing incentives for individual players to invest in different parts of the supply chains needed for sustainable intensification – even though there may be potential profits to be made from coordinated investments.

Development interventions may overcome the low level equilibrium trap in three broad ways: by making 'pump priming investments' which increase investments, and hence transaction volumes and frequencies, across critical minimum thresholds; by 'threshold shifting' interventions leading to technology or price changes, which improve revenues or reduce costs and risks for private players and thus move them across critical thresholds which lock them into low level equilibrium traps; and by promoting 'supply chain coordination mechanisms' that encourage investment decisions to transcend the narrow self-interests of different players in the supply chain. These coordination mechanisms may involve a 'local' or 'extensive' scope of coordination and 'exogenous' or 'endogenous' processes of coordination development.

During the late colonial and post independence periods active state intervention in agricultural and rural development become increasingly common in SSA, with widespread establishment and growth of powerful agricultural marketing parastatals with multiple regulations limiting private sector marketing activities. It was increasingly believed that state intervention could coordinate smallholder farm activities with state controlled trading, infrastructural, research and extension investments and activities. Through such coordination the state could take on investment risks without relying on the weak and (after independence) often distrusted private sector – which found such investments challenging and unattractive. By the beginning of the 1980s, however, policy analysts and donors' became increasingly aware of the difficulties faced by parastatals, which were generally part of a bloated and inefficient state apparatus that was inefficient and ineffective in serving the agricultural sector and at the same time an enormous drain on government resources. These difficulties of parastatals were compounded by, and associated with, wider problems in macro-economic management.

To address these problems, structural adjustment and liberalisation programmes were advocated. These involved currency devaluation and tight fiscal management; withdrawal of state intervention where it was subsidising, producing or marketing 'private goods' (as opposed to 'public goods'); a re-focusing of the state on provision of 'public goods'; deregulation and removal of many government controls to promote private sector investment and activity in competitive markets; and opening of markets to international competition.

Assessment of the outcomes of these reforms is very difficult. Structural adjustment and liberalisation programmes have achieved mixed success in improving macro-economic conditions, with reductions in exchange rate overvaluations, budget deficits and inflation rates, but considerable variation in the extent, permanence, speed, and effects of reform processes. The reforms have been most successful in promoting agricultural exports and there have also been some benefits in reduced food prices for processed staples for poor consumers in southern Africa. However the desired growth in private sector marketing and in agriculture has not fully materialised and liberalisation has not delivered the substantial agricultural growth needed to drive rural poverty reduction and increased food security. There has been a notable lack of

success in developing input, output and financial markets offering attractively priced, timely and reliable services that are critical for more intensive cereal intensification.

Three broad explanations are given for the mixed and disappointing results of liberalisation. The 'partial implementation' view argues that the poor results can be attributed to government failures to fully liberalise their agricultural sectors, with piecemeal, start-stop liberalisation and frequent policy reversals depressing the returns and raising the risks associated with private sector investment. A second view puts the blame for disappointing liberalisation outcomes on weak institutional support for market and private sector development, with cultural, political and legal factors undermining clear property rights and hence private investment incentives. The third, more radical, view questions perceptions of the superiority of liberalised markets in overcoming low level equilibrium traps, noting that large scale and pervasive state interventions generally accompanied the green revolutions which underpinned widespread and rapid pro-poor growth in poor rural areas around the world during the 20th century. In summary, activist state intervention in agricultural markets in poor rural economies has a record of both dramatic successes and dramatic failures, but experience with market liberalisation in poor rural economies shows very limited, if any, success in stimulating significant broad based growth and poverty reduction processes.

These three explanations of agricultural liberalisation failures share a concern about the weakness of the state and a lack of capacity to perform critical functions, but have different views about the appropriate scope and reach of state responsibilities and activities. The third view suggests that the state needs to play a critical role in promoting coordination in the development of a market economy, but this poses severe political challenges, and it is argued that many SSA countries have developed political economies which promote developmentally damaging 'rent raiding' rather than more positive 'rent harvesting' by political and bureaucratic elites (in which the rents are essentially a payment for development enabling behaviour by these elites). These countries then face a 'double trap' of mutually reinforcing market and state coordination failures. Rapid and widespread escape from these traps requires radical and sustained political change together with the introduction and implementation of coordination systems that yield credible promise of significant benefits to participants. A more likely but slower and still fragile path out of the 'double trap' is likely to involve smaller and less ambitious but also mutually reinforcing steps which build on 'best bet' technical and coordination opportunities to demonstrate both the benefits of success and the strength and credibility of parties committed to change. It is also important to strengthen wider mechanisms for controlling rent seeking in state interventions. Three such mechanisms involve (a) increasing the state's external accountability to (and the voice of) the clients it is supposed to serve, (b) competition (either between states or across jurisdictions within a state for the supply of an appropriate development framework) and (c) development of greater internal vision for and accountability in state activities. These may be (simplistically) characterised as voice, choice and targets.

A limited set of case studies are presented discussing the processes and effects of liberalisation in grain crops (maize and rice), annual cash crops (cotton, tobacco and groundnuts) and perennial crops (tea, coffee and cocoa) drawing on information from 9 countries in SSA. These include examples of both success and failure and, for maize where success is the exception rather than the rule, suggestions for possible maize development systems are put forward

The case studies support the general historical characterisation of agricultural policy change. The different problems and successes in food crops and high and low input

intensity cash crops with differing processing requirements also confirm the importance of coordination problems constraining intensification of many smallholder crops, and particularly food crops. The almost universal presence of larger market organisations in successful case studies also demonstrates the importance of effective hierarchies as a critical ingredient in supply chain coordination and market development. Different policies are then needed for food and cash crops, for high and low input crops, for crops with and without significant processing asset specificity, for high and low potential areas, for more accessible and more remote areas and countries, and for areas and countries at different stages of development and with different levels of economic activity and welfare. The need for different policies in different situations implies that it is difficult to come up with any general prescriptions for agricultural market policies in SSA. It is, however, possible to identify broad policy objectives and particular issues which policy makers and analysts need to address in defining wider approaches to agricultural market development in SSA.

The review and case studies support a growing consensus that the outcomes of agricultural liberalisation in SSA have been disappointing and that in many ways the agricultural liberalisation agenda has failed the people of Africa. This is not to argue that pre-liberalisation policies could have been sustained, that they were preferable to the liberalisation policies that followed, or that liberalisation has not delivered any benefits. However, it has not delivered the benefits it promised and, particularly for producers of food crops and poorer people living in poor rural areas, it has not supported the significant and broad based agricultural transformation that is needed for wider poverty reducing growth.

The liberalisation agenda has failed to sufficiently address core coordination problems in developing supply chains in fragmented and atomistic markets. Ironically this is illustrated by some of liberalisation's successes. These often depend upon monopsonistic arrangements between crop buyers and smallholder producers, with pragmatic and sophisticated processes of sequential and selective dismantling of particularly problematic pre-liberalisation state structures, and complementary strengthening of some existing or new non-market coordination mechanisms.

The extensive failures and limited successes of both state sponsored and liberalised market coordination in African agriculture over the last 40 years preclude future policy from relying on either post independence or liberalisation models for agricultural market development. New 'developmental coordination' approaches are needed. These should recognise the problems of endemic failures in both state and market coordination, but craft institutional arrangements that provide incentives and checks for state, commercial, community based and non-governmental agents to work together in mutually beneficial, effective and efficient partnerships.

Establishing such 'developmental coordination' approaches to agricultural development in SSA faces many challenges: in identifying legitimate state concerns and responsibilities; in defining appropriate roles for state, commercial, community based and non-governmental agents; in establishing institutional frameworks governing these roles; and in implementing appropriate coordination mechanisms. These must be considered together in the context of complex and changing political, social and economic conditions, and must take account of the need for the management of difficult transitions that should follow from success – from dominance of food deficit to food surplus problems; of staple food production to higher value crops and livestock; of agriculture to non-agricultural activities; of state to private investment in the economy; and of economic coordination by 'atomistic relational

market systems' through 'developmental coordination' to 'market and hierarchy reputational systems'.

Critical issues that need to be addressed in supply chain development include traditional concerns regarding prices (levels and transmission) and technology; political and economic governance structures; institutional arrangements, 'industrial organisation', the institutional environment and the density and volume of exchange. These relate to the complementary 'levers' for breaking out of low level equilibrium traps: pump-priming or big push investment, threshold shifting, and improved supply chain coordination.

In pursuing these, trade-offs have to be accepted, with, for example, some coordination mechanisms increasing rent seeking costs and risks: the challenge is then to encourage coordination systems which are relatively efficient and equitable and where the gains from increased coordination and reduced opportunism outweigh potential increases in costs and risks of rent seeking. This requires detailed attention to the development and regulation of institutional arrangements between different agents. However regulation by the state carries its own difficulties and dangers, of inefficiency and of new rent seeking costs and risks. Similarly some governance mechanisms promoting voice, choice and targets may increase rather than reduce incentives for 'rent raiding' rather than 'rent harvesting'.

Private agents must believe in the power of the state to enforce institutions, but also in commitments by the state that it will not intervene to pursue short term political or patronage benefits. At the same time policies and interventions need to be flexible to address varied and changing opportunities and constraints, to experiment with policies, and to respond to highly uncertain natural, economic and donor policy environments. A first step is to recognise the problem, and then to identify key elements for managing change. These are likely to include both local and wider actions that seek to tread a path out of the 'double trap' with an emphasis on transparency and on deliberative mechanisms that establish goals and rules for responding to and managing change, with checks and balances that restrain and penalise opportunistic behaviour by governments and donors (and their agents) as well as other stakeholders. Such mechanisms inevitably imply some mutual surrender of sovereignty.

The conclusions from this work suggest important ways forward: for government, donor and other agents' policies and actions addressing the complex inter-relationships among state and/or market coordination failures; for action research investigating local and wider 'institutional innovations' to climb out of this double trap; and for further research learning from improved understanding of the impacts of different policies in different country and commodity systems.

Glossary

AV	Associations villageoises'
CBO	Community based organisation
CPR	Common property resource
CME	Coordinated market economy
GIE	Economic Interest Groups
LME	Liberalised market economy
MFC	Marginal factor cost
MVP	Marginal value product
NGO	Non government organisation
OECD	Organisation for Economic Coordination and Development
PRSP	Poverty reduction strategy paper
SCOBICS	Sustainable Community-Based Input Credit Scheme or
SSA	Sub Saharan Africa
TV	Tons villageoises

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1 Introduction and objectives

This report presents the findings and conclusions from a desk study on the impacts of agricultural liberalisation in sub Saharan Africa (SSA).

The study addresses three broad sets of questions regarding agricultural liberalisation in SSA:

- What agricultural policy changes have happened over the last 50 or so years in SSA?
- Why were different policies introduced, how were they implemented, and what were the effects of different aspects of these policies – and why? How do agricultural policies and performance relate to agricultural growth and market development. Is there any information that can link them to poverty related indicators? How did the political economy determine the evolution, implementation and impacts of policy change?
- What lessons can be learnt from this for the options facing policy makers in SSA today? What are the potential advantages and disadvantages of different options? Are there any new options that need to be considered? What political economy issues affect the way that different options need to be implemented?

The report is arranged in three main parts. Part I summarises in some detail the broad issues identified in the Inception Report (April 2004). This addressed the first two questions above (a) by developing a conceptual framework identifying the main policy challenges facing agricultural development in SSA and (b) by providing a historical review of the way that different policies have responded to changing perceptions of and emphasis on these challenges. A new section discussing political economy considerations of state and market coordination is also included here. The Inception Report provided a basis for the selection and conduct of country and commodity case studies. The findings from these are reported in Part II. Part III then draws together conclusions regarding both the outcomes of agricultural liberalisation in SSA and policy approaches that are appropriate for the different challenges facing agriculture in SSA today.

PART I: CHALLENGES TO AGRICULTURAL DEVELOPMENT IN SUB SAHARAN AFRICA : A HISTORICAL AND THEORETICAL REVIEW²

This part of the report summarises the arguments presented in the Inception Report (April 2004). We begin with a summary of the basic conditions facing agricultural development in Sub Saharan Africa and then uses a variety of different analytical and theoretical approaches to draw out the challenges that these conditions pose to agricultural development policy. This leads into a review of how agricultural development policy in SSA has addressed these challenges over the last 50 years or so.

2 Agricultural development in Sub Saharan Africa

Smallholder agricultural development plays a critical role in poverty reduction in SSA due to the large numbers of poor people in rural areas and the critical role of agriculture in driving growth in poor rural areas. However, the performance of SSA's agricultural sector over the last 30 years has been very disappointing. Very low rates of growth in the 1970s were followed by increases in the 1980s and 1990s, but per capita growth has been very low or negative over much of the period and SSA is the only region with agriculture growing at a rate below overall population growth from 1965-1998. Low or negative per capita growth in agriculture in much of SSA is associated with high incidence and severity of rural poverty, widespread reports of agricultural stagnation, and low use of fertilisers and low crop yields. An issue of particular concern is the reliance of much of SSA's agricultural growth on expansion of cropped areas rather than of crop yields, particularly in cereal production. SSA's increased cereal area is accompanied by a fall in rates of fertiliser use, and only a small rise in cereal yields. This pattern of agricultural growth presents a major problem as cultivation extends onto increasingly fragile and vulnerable land (see for example Kydd *et al.* 2004).

It is widely recognised that SSA agriculture needs a process of 'sustainable intensification' with increased marketed production from greater use of purchased inputs (especially seeds and inorganic fertilisers), often with complementary use of locally available organic inputs (see for example Reardon *et al.* 1999). This would provide a sounder basis for future agricultural development but it demands a framework of more complex and effective public and private institutions and faces many challenges. These challenges may be considered under three main categories – those arising as a result of agro-ecological and geographical conditions, those arising from global economic conditions, and those arising from political and historical conditions. Although some technical, social and political developments do offer new opportunities for growth and development, conditions for agricultural development in SSA today are generally more difficult than those that were faced by countries (mainly in Asia) that successfully developed smallholder agriculture in the past,

2.1 Geography and agro-ecological conditions

Many of the challenges which SSA faces in agricultural development relate to geography and agro-ecological conditions. Most of SSA lies within the tropics where soils are often more fragile and less fertile than in temperate zones, whilst pests and diseases are harder to control. SSA also has a very varied agro-ecology with

² For fuller exposition of these arguments, and reference to sources, see the Inception Report.

different conditions often existing side-by-side in the same country and demanding different policies, services and technology development. These and other differences also make it difficult to generalise across and even within countries, and require that policy analysis, recommendations and implementation are focussed and tailored to match differing conditions (an important issue in this study, to which we shall return). Variable rainfall and drought are particularly problematic in many parts of SSA and a frequent cause of crop failure. Water control is also difficult and irrigation very limited. Partly as a result of this there are large parts of SSA where the dominant staples are roots, tubers, bananas/plantains and lower yielding cereals such as sorghum and millet. Development of these crops, and of extensive livestock keeping which dominates some areas, faces a range of technical, marketing and economic challenges which are much less acute with the 'green revolution cereals' (wheat, rice and maize) on which successful agricultural development was based in Asia (although maize is of course a major crop in SSA, and rice is also important in some areas).

Population densities are also very low in many parts of SSA, leading to high per capita costs of service delivery and infrastructure development, but rapid increases in population without accompanying improvements in agricultural technology pose environmental and social difficulties. The high proportion of landlocked countries in SSA also poses trade and communication costs.

2.2 *The global economic environment*

Another major set of policy challenges arises from global economic conditions as compared with those facing countries that successfully achieved significant smallholder agricultural development in the second half of the 20th century by.

World export crop and food prices have fallen in real terms over the last 30 years with more integrated global markets making import substituting agriculture in SSA very vulnerable to international competition. Increasing emphasis in global markets on flexibility, quality control and tracking in highly organised and integrated supply chains also poses difficulties for smallholders and undermines historic competitive advantages in labour intensive agriculture.

Developments in the science and organisation of bio-technology present opportunities for development of a new generation of crop varieties adapted to smallholder needs. There are also a wide range of existing technologies available for adoption. However much greater research resources are being invested in developing new varieties targeted at large scale commercial farmers and this poses a further threat to smallholder agriculture (see for example Pingali 2001).

2.3 *Political and policy conditions*

Many parts of SSA face particularly difficult policy and political constraints. Formal political structures and institutions tend to be relatively new, with substantial political change since independence. Countries tend to be culturally and ethnically diverse. Patrimonial systems of government and politics are common, diverting resources from broader development goals without effective checks and balances, and without a sizeable and well established middle class providing a strong administrative cadre holding governments to account. Smallholder farmers also tend to be a weakly organised and represented constituency, despite their large numbers. Civil wars have been a serious obstacle to development in the continent, while the small size of most states places them in a weak economic position in negotiations with donors and international organisations, and also makes their economies, with smaller domestic

markets, more vulnerable to external changes. Strong political and economic ties with the countries of their former colonial rulers have often persisted at the expense of better integration with regional neighbours.

The last thirty years have also seen dramatic changes in the dominant economic policy paradigms among international organisations and OECD countries, with increasing scepticism as regards the effectiveness of state agencies as economic actors and increasing emphasis on market solutions. In many ways these policy changes are the subject of this entire study, but we note here that pre-liberalisation policies which supported some very successful agricultural development in other parts of the world (particularly Asia) in the latter parts of the 20th century have not been available to SSA governments over the last 20 years or so as a result of both their own inability to pursue them without external financial support, and the promotion by the Bretton Woods organisations and external donors of liberalisation policies in developing countries.

3 Policy challenges: agricultural intensification and coordination in supply chain development

Agricultural intensification involves technical change and input, seasonal finance and marketing systems which increase farm production and deliver it to consumers at a competitive price. Intensification therefore involves the development of supply chains around smallholder farmers³, with simultaneous and complementary investments in all links in the supply chain. Making these simultaneous investments can, however, pose serious difficulties in poor rural areas, as a result of transaction costs and risks, which include coordination, opportunism and rent seeking costs and risks.

3.1 Coordination problems in poor rural economies

Poor rural areas in poor economies are characterised by low total and monetary incomes for most people, with consequent limited consumption and expenditures, a poorly developed monetary economy with a narrow base, and markets (for agricultural inputs, outputs and finance, consumer goods and services, etc) which are relatively 'thin' (with small volumes traded, although for some items there may be very large numbers of people trading in very small volumes) and prone to large seasonal variability in demand and supply. These conditions normally coexist with poor roads and telecommunications; poor information (particularly in agriculture, on prices, on new technologies, and on potential contracting partners); difficulties in enforcing impersonal contracts, and rent seeking behaviour by politicians, bureaucrats, criminals and the private sector.

These conditions pose particular problems for the supply chain development needed for agricultural intensification, as such development requires significant investments by new players entering the market, and these investments carry high risks of transaction failure and (the other side of the coin) high transaction costs involved in obtaining protection against such risk. These risks and costs can be considered in terms of rent seeking, coordination, and opportunism. Coordination risks are the risk of an investment failing as a result of the absence of complementary investments by other players in a supply chain. Opportunism risks arise when another contracting party, with monopsonistic or monopolistic control over a complementary investment

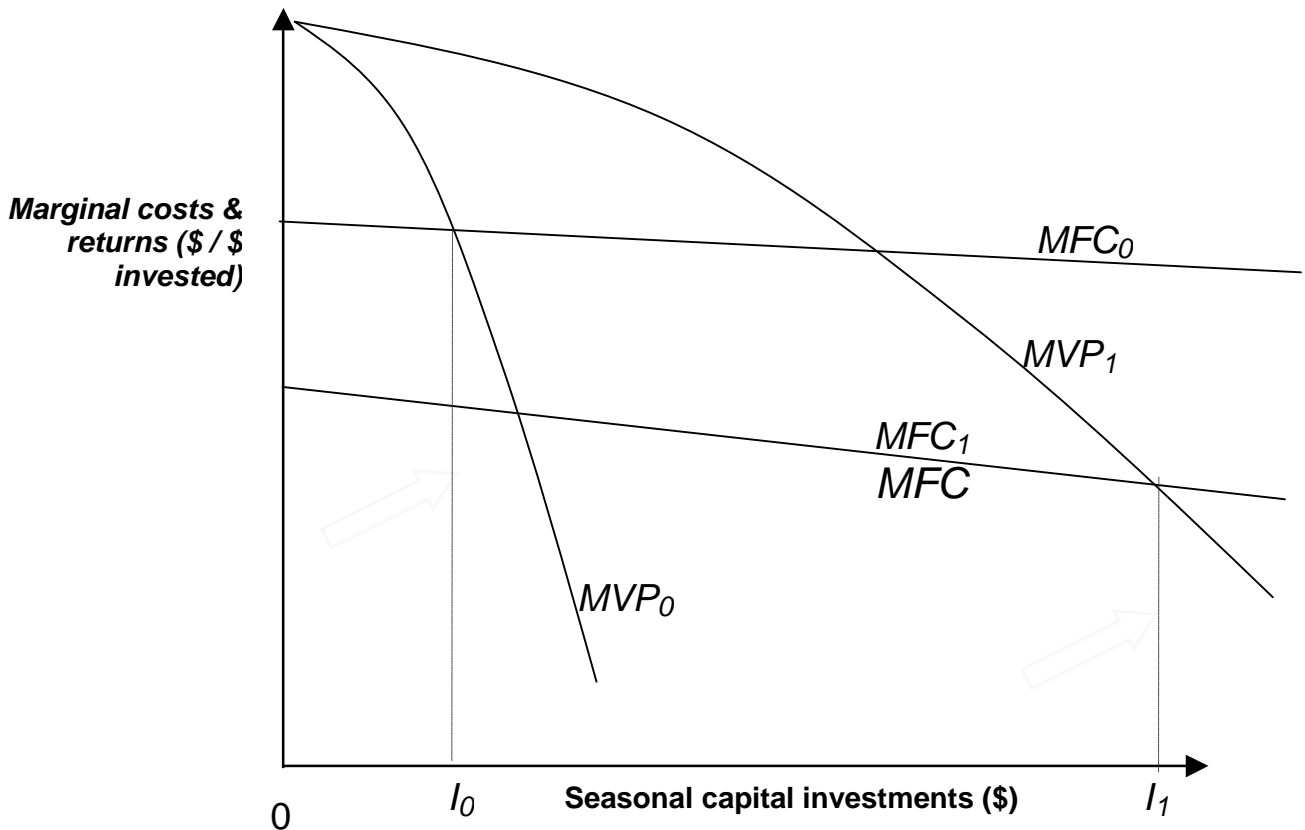
³ The focus of this study is on agricultural liberalisation as it affects smallholder agriculture in sub Saharan Africa. There is a large literature about the importance of smallholder agriculture in driving pro-poor growth, see for example Kydd *et al.* 2004 for a recent discussion.

or service, removes or threatens to remove it from the supply chain after a player has made an investment that depends upon it. Similarly rent seeking risks arise when powerful government, political, criminal or other agents not party to a transaction see associated investments and/or revenue as an opportunity to expropriate or threaten to expropriate income or assets from the investor. Coordination, opportunism and rent risks (and the costs of protection against them) are closely related and where these are high as compared with potential returns to investment, then the investors required to establish new activities for developing an agricultural intensification supply chain may find the investments too risky, and thus the supply chain may not develop even if it is potentially profitable.

This situation is described in a formal economic model in figures 3.1 and 3.2, which describe a situation where all actors face a two stage investment problem: they must make stage 1 investments in assets specific to a particular supply chain activity in order to reap net revenues in stage 2. Their revenues in stage 2, however, are determined not only by the scale of their own stage 1 investments, but also by the scale of others' stage 1 investments (investments which are not known to them when they make stage 1 investments).

Figure 3.1 shows the relationship between individual actors' marginal factor costs and marginal value products (on the vertical axis) from seasonal investments, under conditions of different behaviour by other actors in the supply chain, taking smallholder maize production in a poor rural area as an example. This diagram shows that investment in seasonal inputs (stage 1 investments) without complementary investments and transactions (by input sellers, financiers, and produce buyers) incurs high marginal factor costs (MFC_0) and a rapidly falling marginal value product (MVP_0). The result is profit maximisation around subsistence production (with investment I_0), and only small surplus sales in good and normal years. With complementary investments and transactions by other actors, however, reduced transaction costs and risks lead to a fall in marginal factor costs to MFC_1 , and the marginal value product is maintained for surplus sales and hence higher production (MVP_1). The combination of lower MFC and higher MVP leads to profit maximisation at much higher levels of investment (I_1) and net income, with a significant marketable surplus beyond the households' own subsistence needs.

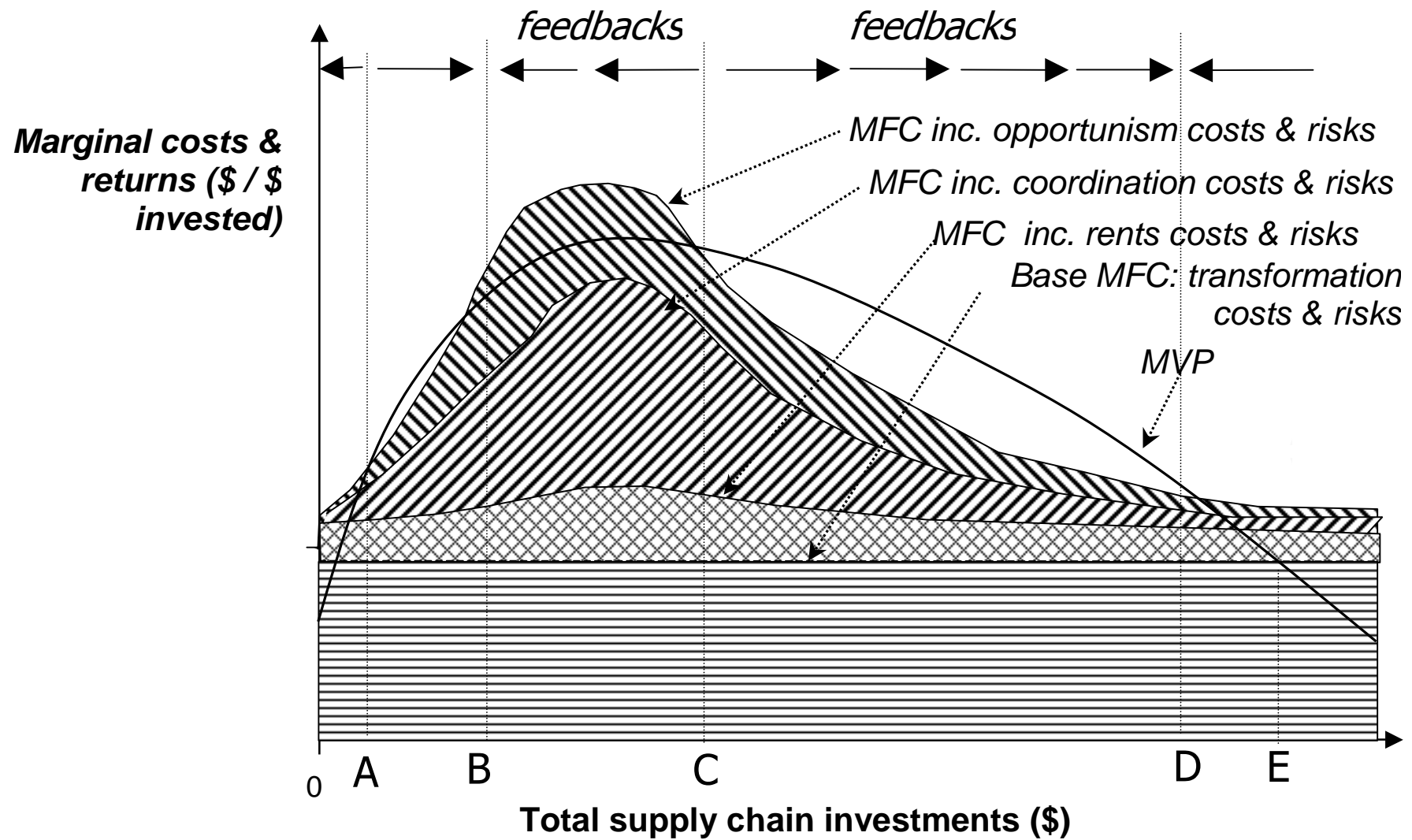
Figure 3.1 High and Low Level Firm Investment Equilibria



If a similar situation is faced by the other actors making complementary investments in the supply chain, then there will be two possible system equilibria as shown in figure 3.2. This examines marginal factor costs and marginal value products for investment in an industry or commodity supply chain assuming that this is distributed along a complete supply chain. It distinguishes between different elements of marginal factor cost (MFC). We begin by considering only conventional neo-classical production economics analysis, using a 'Base MFC' line, which is determined by factor prices⁴. Considering only these factor prices, optimal supply chain investment occurs where the Marginal Value Product (MVP) curve cuts the Base MFC line, at E. The shape and position of the MVP curve is determined by the price of the supply chain output(s) and by the technologies employed (higher prices and better technologies both lift the MVP curve, while diminishing marginal returns and falling prices in limited markets both cause MVP to fall at higher levels of investment).

⁴ Where there are returns to scale in purchasing or transport costs then the MFC may be slightly downward sloping, but otherwise in perfectly competitive markets the Base MFC should be roughly constant and independent of scale. A supply chain may, however, constitute a substantial share of input markets, and in such circumstances the Base MFC would be expected to rise with increasing supply chain investments. The slope and shape of the Base MFC is therefore likely to vary between different situations.

Figure 3.2 High and Low Level Supply Chain Equilibria



We now introduce costs and risks associated with coordination failure, opportunism, and rent seeking. These are represented in figure 3.2 in three bands above transformation costs and risks.

The second cost and risk band in figure 3.2 represents rents. There is a long standing and increasing concern about poor governance and opportunities for elites (for example politicians, civil servants or formal or informal groups or individuals) to extract 'rents' in the context of weak or poor and predatory governance systems (see for example Bird *et al.* 2003 and DFID's work on Drivers of change). These rents may be legitimate tax demands or illegitimate demands for bribes, 'cuts' or 'fines'. Rents can have positive effects (for example financing delivery of public goods and/or accumulation of capital for local investment or redistribution as described by Khan 2004) but these positive effects (where they exist, and in many cases they do not) need to be set against their costs: increased risks, uncertainty and costs in productive activity, with depressed and distorted returns to and incentives for investment. There are no strong *a priori* arguments for a particular relation between total supply chain investment and MFC for rent costs and risks, but one might expect MFC to decline with increasing supply chain investment (*ceteris paribus*).

The third and fourth cost and risk bands in figure 3.2 represent coordination and opportunism risks and costs. The nature of the relation between thin markets on the one hand and risks and exposure to coordination failure and opportunism on the other suggests that large levels of investment in a supply chain should substantially reduce coordination and opportunism costs and risks. Reduced risks of coordination failure and opportunism (and hence falling MFCs) are likely at high levels of investment either through thick markets (as discussed earlier) and/or through efficiencies achieved in large firms (an issue we discuss later)⁵. Reduced risks mean that less costly counter measures are required, but unit transaction costs also fall with higher volumes, giving a double benefit in cost reduction from greater levels of investment and turnover.⁶

The most obvious impact of adding coordination, opportunism and rent costs and risks to the conventional neo-classical analysis is a shift of the profit maximising equilibrium point to the left (from point E to point D), leading to lower levels of investment and production. There is also a very substantial shrinkage of the region where MVP is greater than MFC (between investment levels C and D). If investments

⁵ As discussed earlier, transaction risk in market arrangements are likely to fall at higher levels of supply chain investment as more players allow market coordination mechanisms to work and reduces the risks and costs of protection against both coordination failure and opportunism. Larger transaction volumes and/or more frequent transactions also reduce costs and risks in (inherently less risky) hybrid and hierarchical arrangements for exchange and coordination as the fixed costs of establishing these relationships are spread over larger and more frequent transactions, and more frequent transactions themselves facilitate the establishment of these relations and provide incentives for contracting parties and employees to honour them (Williamson 1985, 1991).

⁶ Discussion of figure 3.2 focusses on declining rent, coordination and opportunism costs at higher levels of supply chain investment, as this is critical to understanding coordination failure and the low level equilibrium trap. In some circumstances, however, low levels of investment may support very local or within household production and consumption chains. In such circumstances increasing investments may face increasing MFCs from risks of coordination failure and opportunism due to the crossing of thresholds from subsistence to surplus production and sales (by individual households and by local communities), leading to the need for widening circles of trade and hence of trading relationships. In the context of a weak institutional environment and thin markets, the establishment of new trading relations carries significant costs and risks. This postulated behaviour of the MFC curve at low investments (as drawn in figure 3.2) is not critical to the basic conceptualisation of low level equilibrium traps, it merely explains the existence of *non-zero* low level equilibria. The high but falling MFC at higher levels of investment is, however, critical to the existence of low level equilibrium traps.

in a supply chain are initially below C, then investors have no immediate gains from increased investment (since MFC is greater than MVP) and no incentives to invest – in fact the incentive is to reduce investment as long as MFC is greater than MVP. As drawn, this will cause investment to fall to B, which represents a low level equilibrium (equivalent to profit maximisation around subsistence production in Figure 3.1)⁷. There is then a critical threshold level of total supply chain investment (point C in figure 3.2) below which the marginal returns to investment are negative. The total level of investment therefore has positive (or negative) feedbacks above (or below) this threshold. Below the threshold the supply chain is caught in a low level equilibrium trap.

This analysis depends upon two conditions: (a) individual players facing different individual MVP and MFC curves depending upon total (balanced) supply chain investment (as shown in figure 3.1)⁸; and (b) some institutional coordination failure that prevents players individually or collectively moving to high levels of supply chain investment.. Generally, smallholder farming areas of SSA are characterised by an atomistic market, with many small players but without non-market coordination or significant efforts towards collective action. This analysis explains individual choices around a stable low level equilibrium: ironically (given the debates about market liberalisation) the neo-classical ideal of perfectly competitive markets then provides some of the necessary conditions for coordination failure, and escape from the low level equilibrium trap requires the development of non-market coordination mechanisms.

Williamson 1985, 1991; Williamson 1994 identifies firms, markets and relational contracts (or hierarchy, market and hybrid arrangements) as the three main types of contractual arrangement, with widespread use of hierarchy and hybrid arrangements to deal with problems of asset specificity in developed economies. Hall and Soskice 2001, comparing the relative importance of hybrid and competitive market arrangements in different OECD economies, highlight first the importance of large firms and hierarchical arrangements in providing coordination mechanisms in all types of market economy and second the comparative institutional advantages of greater reliance on non-market arrangements for coordination between firms in industries where large investments are needed in specific assets⁹. Both these points challenge simplistic prescriptions for the development of markets as a necessary component of efficient economic development.

⁷ As noted in the previous footnote, at low levels of investment the MFC and MVP curves may take a variety of different shapes, and relate to each other in a variety of ways. The broader argument for the existence of a low level equilibrium trap is not sensitive to these shapes provided that with increasing total supply chain investment MFC moves from a position above MVP to one where it lies below the MVP, before these positions are again reversed. In other words, crossover points C and D are critical to the existence of high and low equilibria. Drawing of crossover points A and B in figure 3.2 illustrates ways in which non-zero low level equilibria may exist but this is not critical to the coordination failure arguments developed in this paper.

⁸ The differences in figure 1 between MFC and MVP in the presence and absence of assured complementary investments and transactions results from differences in these costs and risks in input and finance markets (for the MFC curves) and in output markets (for the MVP curves) There may also be differences in technology, where a low input technology is more profitable under high risk/cost conditions and a high input technology is more profitable under low risk/cost conditions. This is particularly relevant for sustainable intensification in smallholder agriculture.

⁹ Hall and Soskice 2001 distinguish between liberalised market economies (LME's) and coordinated market economies (CMEs). In the first case liberalised markets provide the main coordinating systems between and firms while in the second case coordination is also achieved through significant state activism and/or through membership associations linking different firms engaged in common supply chains.

The observation that large firms and hierarchical arrangements play a major role in all types of market economy contrasts with the lack of large firms and hierarchies in many poor economies (Fafchamps 2004, demonstrates this very clearly for SSA economies). It also suggests that the increased coordination required for economic growth and development tends to be delivered by a shift from poorer economies dominated by small atomistic players linked by (weak) market and hybrid arrangements to greater reliance on thicker markets and/or hybrid arrangements linking larger firms in wealthier economies. More developed economies are therefore characterised by increased scale and scope of hierarchical arrangements. This represents an important challenge to neo-classical orthodoxy, as it suggests that the development of larger hierarchy arrangements may be at least as important in economic growth as the development of wider competitive market arrangements. Development should then be characterised not in terms of development of a market economy but as a movement from 'atomistic relational market systems' to 'market and hierarchy reputational systems'.

Why then do wider hierarchical arrangements not develop to overcome the associated asset specificity and low level equilibrium trap problems of poor rural areas? Hybrid arrangements are common in poor rural economies, but usually involve relational contracts between individuals or small firms (Fafchamps 2004) and thus tend to be limited in the scale and geographical scope of their activities. A number of factors inhibit both endogenous development of larger firms and inward investment by large urban based or foreign owned firms: difficulties in acquiring large areas of land in poor rural areas; particular difficulties in coordination without control over agricultural land and production; a large minimum scale needed to achieve the levels of supply chain investment and activity required to cross the low level equilibrium threshold (preventing the growth or endogenous development of firms); poor communications infrastructure; weak institutional environment and property rights; limited numbers of people with entrepreneurial skills and local and personal knowledge; costly and difficult access to capital; and high risks and relatively low returns compared to alternative investment opportunities. The last point is particularly applicable to food crops¹⁰. As a result although there have been many large scale inward cash crop investments by large firms, there are very few private investment success stories in smallholder food crop production without substantial public sector support¹¹. This is a major problem as food crops constitute a major and critical part of poor rural economies, and historically their development has provided the initial stimulus to most examples of successful pro-poor growth in poor rural economies.

3.2 Policies for overcoming coordination failure in poor rural economies

This analysis of the development challenges posed by thin markets, asset specificity and coordination failure has practical implications for policies promoting market led

¹⁰ Many of these problems are less severe for some cash crops needing large but potentially very profitable investments in processing facilities. These investments provide foreign companies with profit incentives to invest in interlocking systems for vertically integrated coordination of seasonal input and finance and other services needed to induce sufficient and reliable smallholder production to make the investment in processing facilities profitable. Critically, however, the need for large scale investments also makes it easier to develop institutional arrangements protecting investments in seasonal finance delivery against opportunism by farmers and crop traders. This is because large foreign firms have greater ability to access external sources of capital and expertise needed for investments in processing facilities, and this can provide them with a monopoly over crop processing facilities, and so control over the supply chain. Successful smallholder cash crop systems working along these lines, and the difficulties they face, are discussed in sections 6.4 and 6.5.

¹¹ Even in cash crop production systems, some government or donor coordination or subsidy has often played a part in attracting foreign investment.

pro-poor agricultural growth in poor rural areas as we can use it to consider processes by which a set of actors may escape from the trap (and increase productivity at higher equilibria). We use the broad structure of figure 3.2 to identify three broad 'functions' of development interventions: supply chain coordination (allowing investment decisions to transcend the narrow self-interests of different players in the supply chain), pump priming investment (lifting supply chain investments across critical minimum thresholds), and threshold shifting (which involves changing the MVP and different MFC curves to move or remove thresholds).

The first intervention 'function' involves the development of an effective system supporting coordinated, complementary decision making by different players across a supply chain. The major alternative forms of institutional arrangement which such a system may use for achieving this have already been discussed (market, hierarchy and hybrid arrangements) and it is clear that a system relying predominantly on market mechanisms will not be able to provide the coordination necessary to cross substantial thresholds - although market mechanisms may have more of a role where the thresholds themselves can be removed or substantially reduced as part of the broad transition from an 'atomistic market and relational economy' to alternative forms of 'market and hierarchy economy' discussed earlier.

Kydd and Dorward 2004 classify non-market coordination systems in terms of 'local' and 'extensive' *scope* of coordination and 'exogenous' and 'endogenous' *processes* of coordination development. Endogenous 'local' coordination systems may develop either through replacement of smallholders by larger scale (private or state) farms or through local relations linking different local agents interested in investing in different activities in the supply chain, for example through farmer groups or through interlocking arrangements by (generally powerful) traders. In staple crops, where total supply chain profits are likely to be more limited than in cash crops, progress in local investment is likely to be slow (as low returns weaken both the incentives to set up coordinating institutions and the penalties for defection). Eventually, however, if there is sufficient growth in local coordination arrangements then these may in aggregate reach the threshold level of total investment in the supply chain, enabling a transition into a market and hierarchy based coordination system and growth path. Left to itself this process is, however, likely to be slow and fragile, highly path dependent and susceptible to political economy processes of rent seeking and to shocks affecting the total investment threshold.

Exogenous alternatives to slow and fragile endogenous local coordination processes are (a) externally assisted 'soft' local coordination processes (for example involving state or NGO support for the development of farmer organisations, for trader associations, or for contract grower, nucleus/ outgrower and other interlocking systems) or (b) more extensive 'hard' coordination where a strong central coordinating body with a mandate from the state ensures investments across the supply chain with highly credible coordinated commitments¹². As discussed later, agricultural parastatals in SSA often attempted to follow this last approach by establishing large hierarchical organisations (large in scale and scope). These large parastatal hierarchies then (with government agencies) took over investments and investment risks for all parts of the supply chain except on farm production and retail sales (although even here they were sometimes involved), and then tried to establish links with farmers to constitute a major part of a coordinated system for planning and delivery of farmer services (for financial services, and input and output marketing).

12 This distinction between 'soft' and 'hard' promotion of coordination reflects observations by Hall and Soskice 2001 of differences between CMEs in types of state support.

The parastatal system is not the only model for pursuing 'extensive coordination' but it is a highly instructive one in many ways. Its dramatic failures and achievements highlight both the difficulties facing the development of extensive coordination and the potential for success. Furthermore, where it was successful, it generally involved not only effective action to improve supply chain coordination (the focus of our discussion above), but also action to support the two other 'escape mechanisms' discussed earlier and to which we now turn: pump priming and threshold shifting. This reflects a simple conclusion from the relationships illustrated in figure 3.2, that the development of coordination mechanisms (through endogenous local mechanisms or through different types of local and extensive exogenous external support) will be easier the closer a supply chain is to its critical threshold (at C in figure 3.2) and this situation will arise with a higher investment base and/or higher profits in the supply chain.

The second function for development interventions, 'pump priming investment', seeks to provide this higher investment base. It involves government or donor investments attempting to move the level and density of investment in an economy, sector or supply chain to the right and beyond or near the critical threshold at point C in figure 3.2. Attention needs to be paid here to types and modes of investment and/or subsidy that are effective in promoting substantial thickening of markets and increases in economic activity. Important challenges concern (a) identifying critical elements of a supply chain where investment will have wider stimulative effects (allowing for complementarity between some of these); and (b) ensuring that pump priming is large enough and continues long enough to cause major and permanent shifts in expectations and structural relations within the supply chain while (c) investing in ways that promote complementary private sector investment rather than crowding it out or inhibiting it; and (d) also establishing strict and clear rules establishing time and fiscal limits to public sector investment. Historically the sustained green revolutions in Asia have been successful with (a), (b) and (perhaps to a lesser extent) (c) above, whereas the more abortive green revolutions in SSA have only achieved the first of these, and have then been forced to discontinue investments for reasons of ideology and/or fiscal constraints¹³. Establishing time and fiscal limits to public sector investment is almost universally problematic (as the agricultural policies of most OECD countries demonstrate) but the critical challenge for developing countries is to ensure that the costs do not rise so rapidly as to present a fiscal crisis before major and permanent shifts have been achieved in expectations and structural relations within the supply chain.

Pump priming investment will not have to achieve so much and improving coordination systems will be easier if the critical total supply chain investment threshold (point C in figure 3.2) is lower. Threshold shifting, the third broad development function identified earlier, is represented in figure 3.2 by movement of the MVP curve upwards and of the MFC curves downwards so that point C moves to the left (to lower levels of investment) or disappears altogether. Even without any low level equilibrium trap (i.e. in the absence of point C) upward MVP shifts or downward MFC shifts are beneficial as they will lead to increased supply chain profitability and higher equilibrium investment with higher production.

An upward shift of the MVP curve may be achieved by technical change (with increases in marginal productivity of investment) or by increases in output price. This represents the focus of part of current policy orthodoxy's emphasis on technical change from agricultural research and extension and better producer prices from structural adjustment. Technological development, however, generally requires

¹³ Even where fiscal constraints forced policy changes, the prioritisation of fiscal cuts often reflected dominant donor ideologies.

coordination between different links in increasingly complex supply chains, with increasing investment by different and growing numbers of players. Complementary action is therefore often needed to simultaneously improve coordination and promote technical change, and this needs to be taken into account in the development and promotion of new technologies.

Downward movement of the MFC curves may be achieved by reduced input prices and costs (reducing transformation costs) or by reducing costs and risks of coordination failure, opportunism, or rents. Again current policy orthodoxy emphasising technical change from agricultural research and extension looks to reduce transformation costs and risks in the base MFC while more recent policy emphasis on promoting institutional and property rights development seeks to reduce the costs and risks of opportunism and rents and implicitly looks to the development of competitive markets to reduce coordination costs and risks (although our arguments suggests that under certain circumstances this reliance on competitive markets to reduce coordination costs and risks may be misplaced).

It is important to note here a useful if not always clear distinction between improvements in overall supply chain coordination (which were discussed earlier and are concerned with development of broader coordinating systems) and specific cost reducing institutional arrangements between different players within such a system. Both are needed, the latter being important for actually delivering different systems' potential reductions in coordination and opportunism costs and risks. Here the detailed structuring of relations is important (for example interlocking of bilateral transactions, or the organisational structures and staff management and incentive systems within hierarchies), echoing an important point made by Omamo 2003 that modalities of *how* policies are implemented are often more important than the finer points of *what* policies to implement.

4 Changes in agricultural policies in Sub Saharan Africa

Having considered in section 2 the difficult conditions facing agricultural development and then in section 3 a more theoretical understanding of the policy implications of the way these conditions can constrain development processes, we now turn to a brief examination of the main patterns of change in agricultural policies in SSA in the last 50 years or so. This provides (a) a context for understanding current policies and policy options, (b) potential for learning more general lessons about more and less successful policies, (c) an opportunity to examine some of the issues raised in sections 2 and 3, and (d) background for the selection and conduct of country and crop case studies.

Agricultural policy in SSA since the start of the colonial period has passed through a number of different phases, each reflecting a different set of priorities in relation to policy goals and instruments. Agricultural policy has varied from one region or country to another and one has to be careful in making broad generalisations for the continent as a whole or even individual regions. Nevertheless, it is possible to identify a number of distinct historical phases. Broadly speaking, these are as follows¹⁴:

- The late colonial period (1930s – 1960s)
- The post-independence era (1960s – 1980s)
- Structural adjustment era (1980s – the present)

¹⁴ The inception report also discussed the early colonial period (Late 19th century -1930s) as an important influence on the late colonial period.

4.1 *The late colonial period*

The beginning of this period of colonial rule was marked by the economic downturn of the thirties and when colonial rule ended the global economy was booming and there was increasing concern about the handover to newly independent governments. The period was also characterised by increasingly interventionist agricultural policies implemented via a number of different instruments, such as marketing boards, marketing cooperatives, and licensing laws governing state-approved buying and selling agents. Typically these tools were justified as a means of stabilising agricultural prices, assuring food security and eliminating the exploitative practices of private traders whose interests were often viewed as being in conflict with those of both producers and consumers. The precise mix of instruments and the extent of government intervention varied from one colony to another, and for different crops.

Monopolistic marketing arrangements whose primary aim and effect was to support and subsidise production by European farmers were implemented across Eastern and Southern Africa. European farmers were the main beneficiaries of price support and farm services. Control over agricultural marketing and prices allowed the colonial authorities to finance this support through a complex system of cross-subsidies that effectively taxed African producers and urban consumers. Controls on commercial opportunities for African farmers also simultaneously reduced competition faced by European farmers and (in association with tax demands) forced African farmers to seek employment on mines and European farms.

By and large state control over agriculture and agricultural marketing was less extensive in West Africa than in other parts of the continent. The more developed indigenous West African trading system may help account for this. Nevertheless, state involvement in the agricultural export sector was very significant, especially since the volume of agricultural exports from West Africa was far greater than in other parts of the continent. Policies for commodities where the state did exert significant control differed between French and British colonies. The latter sought to suppress farm prices, especially when global commodity prices rose in the post-war years. The French government in Paris was also more willing to subsidise its colonies. Favoured exporters clearly benefited from this policy.

In East and Southern Africa, colonial authorities also imposed strict control over the marketing of staple food commodities, especially maize. Food self-sufficiency was often a key objective and was pursued by encouraging district-level self-sufficiency and providing protection against imports. Intervention was also motivated by the desire to support European farmers in the region.

The impact of the colonial era on smallholder agriculture was mixed. Whilst commercial production by smallholders was undoubtedly facilitated by colonial rule in some parts of Africa, it was positively discouraged in others. Moreover, even where smallholders played a large role, marketing boards often ensured that rising commodity prices of the post-war boom did not translate into higher farmgate prices. In some colonies, such as Kenya, the bias against smallholders was relaxed in the latter years of colonial rule. Nevertheless, when colonial rule ended, the newly independent nations inherited a dualistic system of agriculture in which some farmers prospered through their links to urban and global markets, whilst the majority pursued a semi-subsistence existence, often on the relatively infertile soils of the hinterlands and in areas poorly served by infrastructure.

4.2 *The post-independence era*

When the colonies gained their independence the new states inherited much of the organisational infrastructure that had been built up during the colonial period as well as the dualistic patterns of agricultural production and land distribution discussed above. In this context immediate post-independence period governments needed to act, and to be seen to act, to promote agricultural and rural development. The private sector was often weak (in organisational capacity and in access to capital and human resources) and large scale private investments in rural areas were generally risky and unattractive, partly because simultaneous investments were needed in communications infrastructure; input and output trading; research and extension; and in farmers' input purchases and production. It was widely believed, however, that state intervention could coordinate smallholder farm activities with state controlled trading, infrastructural, research and extension investments. Through such coordination it could then both reduce investment risks and where necessary take them over from the private sector. It could also access public sector finance sources and invest in organisational and human resource development. State activism also matched a common mistrust of private companies (which were often seen to be associated with exploitation by colonial or local elites, in many instances ethnic minorities), socialist suspicions of the private sector and of markets, confidence in the ability of the state, and dominant economic development theories stressing the importance of industrial sector development (and the taxation of agriculture to finance this). State activism was also frequently a convenient tool for extending personal, party and state power and patronage into rural communities.

While these policies led to some dramatic success stories (Zimbabwe and Malawi and to a lesser extent Zambia experienced maize revolutions) these were often achieved at high cost and could not be sustained. Many investments yielded very little return, and the general picture is one of gradual deterioration in most of the key indicators. Agricultural production per capita, which had remained stable during the 1960s, began to decline. Failure of agricultural output to keep pace with population growth led to increasing dependence on food imports which increased steadily throughout the 1960s and 70s. Agricultural exports, however, declined in the 70s, completely offsetting growth in the 1960s.

Although declining commodity prices and higher oil prices played a role in this, state intervention in the sector has been widely blamed for the poor performance during this period. In most countries parastatal operations were sooner or later marred by inefficiency and corruption, leading to large marketing margins and costly services, with low farm gate prices, large subsidies, and poor and unreliable quality of service. Low production incentives and the fiscal drain on the state budget led to balance of payments difficulties and agricultural stagnation.

4.3 *The structural adjustment and market liberalisation era*

The beginning of the 1980s marked a new phase in agricultural policy in Africa. Policy analysts and donors' became increasingly aware of the difficulties faced by parastatals in both successful and failing agricultural transformations, and saw government intervention in agriculture as:

1. allocatively inefficient or distorting, in the sense of sustaining activity in the domestic economy which produced outputs at a higher resource cost than would have applied if these had been procured from the world market;
2. anti-competitive, maintaining oligopolistic structures which held back market entry, stifling initiative and investment;

3. full of harmful vested interests including those of politicians, officials and (in some versions, for example Bates 1981) richer farmers;
4. a tempting instrument for governments wishing to suppress food price increases;
5. a large net drain on public resources, inhibiting macroeconomic stabilisation and diverting public expenditure;
6. providers of a bad service to farmers (with late input delivery, slothful produce purchase and payment, and corruption at the buying point)

The difficulties of parastatals were compounded by, and associated with, wider problems in macro-economic management: large public sector budget deficits and exchange rate controls and tariffs and non-tariff barriers leading to over-valued exchange rates.

To address these problems structural adjustment and liberalisation programmes were advocated. These involved currency devaluation and tight fiscal management, withdrawal of state intervention where it was subsidising, producing or marketing 'private goods' (as opposed to 'public goods'), a re-focusing of the state on provision of 'public goods' (in agriculture these were considered to be infrastructure, research and extension, but for research and extension there was a shift from state delivery to state financing of delivery by private sector or NGO agencies), deregulation and removal of many government controls to promote private sector investment and activity in competitive markets, and opening of markets to international competition.

These reforms, a response to the very real problems facing African economies and agriculture, were driven by 'recipes' derived from simplistic assumptions that removal of state induced distortions, monopolies and associated rent seeking opportunities would lead to the development of competitive markets. This would unlock private sector resources for investment and usher in the socially efficient and effective market coordination of neo-classical theory while freeing up limited state resources for providing critical public goods.

Assessment of the outcomes of these reforms is very difficult. Few would argue that the pre-liberalisation situation could or should have been sustained, and evaluation of the success of liberalisation as compared with continuation of earlier policies is very difficult, as it demands counter-factual knowledge of what would have happened if earlier policies had been continued. We can, however, judge the success of structural adjustment and liberalisation against their own objectives. Here we observe mixed success in improving macro-economic conditions, with reductions in exchange rate overvaluations, budget deficits and inflation rates, although there has been considerable variation in the extent, speed and effects of reform processes, and in some countries improvements have been followed by periods of regression. The bias against exports has also been reduced. Indeed, it is in the promotion of agricultural exports that the reforms have been most successful. However, despite these success stories, the desired growth in private sector marketing and in agriculture have not fully materialised: although the declines in per capita agricultural production of the 1970s have been halted, growth in per capita production during the 80s and 90s has remained stagnant. Liberalisation has not delivered the substantial agricultural growth which is needed to drive rural poverty reduction and increased food security. Despite some benefits (such as reduced food prices for processed staples for poor consumers in southern Africa - see Jayne and Jones 1997 - and positive impacts in the supply chains for some cash crops in some countries - see Poulton *et al.* 2004 for a discussion of cotton, for example and sections 6.4 and 6.5) there has been a notable lack of success in developing input, output and financial

markets offering attractively priced, timely and reliable services that are critical for more intensive production of many, particularly cereal, crops.

Three broad explanations have been given for the mixed and disappointing results of liberalisation.

First, the 'partial implementation' view argues that the poor results can be attributed to government failures to fully liberalise their agricultural sectors (e.g. Kherallah *et al.* 2000 and Jayne *et al.* 2002). This view points to successes in those sectors where liberalisation has been more pronounced, but blame piecemeal, start-stop liberalisation and frequent policy reversals (or fears of policy reversals) for depressing the returns and raising the risks associated with private sector investment. Another element of this may also be the sequencing of liberalisation policies.

A second view attributes the failure of market liberalisation in delivering expected benefits to weak institutional support for market and private sector development, with cultural, political and legal factors undermining clear property rights and hence private investment incentives (e.g. World Bank 2000, 2002, 2003). This 'weak institutions' view does not question the basic logic of liberalisation, but recognises that in trying to escape the problem of state failure in market interventions, liberalisation policies have run up against other problems of serious state failure – namely, in the delivery of the public goods (institutions and infrastructure) needed for privatised competitive markets to operate. This analysis leads to the current emphasis on governance, which focuses on how to improve the delivery of public goods and reduce associated rent seeking. In this sense, governance is an integral part of market liberalisation policies for economic development, as well as being a goal in its own right.

The third view is more radical in its questions about perceptions of the pervasive failure of state activism and the superiority of liberalised markets. Dorward *et al.* 2004, for example, recognise the very severe problems that have accompanied state activism in agricultural markets in many SSA countries. But they also note that large scale and pervasive state interventions (in the subsidised supply of financial services and inputs, and in output markets) generally accompanied the green revolutions which underpinned widespread and rapid pro-poor growth in poor rural areas during the 20th century. They suggest that the successful (mainly Asian) green revolutions involved three phases with different state/market relations: first a period of basic investments to develop and establish suitable conditions for widespread adoption of more intensive cereal technologies; then a 'kick-starting markets' phase when different government interventions supported coordinated service delivery to farmers to enable wider farmer access to seasonal finance and seasonal input and output markets at low cost and low risk; and finally withdrawal of the state from market intervention once a broad based agricultural transformation had been achieved with increased traded volumes lowering unit transaction costs in credit, savings, inputs and produce markets, and growing volumes of non-farm activity arising from growth linkages. They conclude that activist state intervention in agricultural markets in poor rural economies has a record of both dramatic successes (supporting widespread growth and poverty reduction in some instances) and dramatic failures (causing long term economic damage from very obvious macro-economic and fiscal problems in other cases). Experience with market liberalisation in poor rural economies, on the other hand shows very limited, if any, success in stimulating significant broad based growth and poverty reduction processes, while achievements in improved fiscal and macro-economic management (themselves mixed) have to be seen in the context of these failures. These authors call for a more nuanced approach to policy that

recognises the different conditions and demands of economies with different characteristics and at different stages of development.

These three explanations of the failure of agricultural liberalisation to stimulate greater agricultural growth in SSA (partial implementation of liberalisation, weak institutions supporting liberalised markets, and inappropriate institutions leading to coordination failures in the early stages of growth in poor rural areas) can be related to our analysis of low level equilibrium traps in figures 3.1 and 3.2. Each view represents a different understanding of the shapes and relative importance of the different MVP and MFC curves, and hence different understanding of the existence, extent and nature of low level equilibrium traps.

The analysis of figure 3.2 can also explain the successes and failures of the parastatal model of the post-independence era. Parastatals used a system that combined hierarchy, government and sometimes party machinery for pump priming (by channelling large scale investments into rural areas), threshold shifting (by manipulating farm gate prices and raising MVPs) and non-market coordination (of planning and reliable delivery of research, extension, financial services and input and output marketing). Coordination sometimes also involved contractual arrangements with farmers to encourage them to honour contracts (through interlocking and group arrangements, and through punishments for default). The model sometimes succeeded despite high levels of rent seeking (an intrinsic weakness of the system), if the gains allowed from reduced coordination and opportunism costs and risks outweighed the costs of increased rents. Indeed, North's examination of self interested powerful groups modifying institutions (Davis and North 1971; North and Weingast 1989; North 1990; North 1995) and Olson's analysis of stationary and mobile bandits (Olson 1993) suggest that relatively concentrated and well entrenched politicians, bureaucrats and rural elites, may promote coordination systems, pump-priming investments and various threshold shifting measures to support economic growth in order to increase their rent seeking opportunities¹⁵. The parastatal model failed, however, where short term and diffuse rent seeking became too much of a burden and/or where there were key failures in technology uptake or productivity, in making effective pump priming investments, or in the institutional arrangements governing internal operations or relations with farmers. The final blow to failing parastatals was often declining ability to deliver services or payments of farmers, and hence critical loss of farmers' trust that the system would deliver services and payments efficiently and fairly.

Despite the differences between them regarding an appropriate role for the state, the three explanations of agricultural liberalisation failures share a concern about the weakness of the state and a lack of capacity to perform critical functions: in the first view the state has failed to implement liberalisation policies and to control rent seeking, while in the second view it has also failed to enforce critical property rights and to provide critical public goods. According to the third view liberalisation has precluded the state from providing critical support to non-market coordination. Fukuyama 2004 observes that the process of liberalisation sought to reduce the *scope* of state responsibilities, but, often unintentionally, liberalisation also reduced the *capacity* of the state to undertake its reduced but still critical roles. Liberalisation's attempts to escape the problem of state failure by relying more on markets and the private sector and less on the have nevertheless run up against the buffers of state failure (Dorward *et al.* forthcoming). There is therefore agreement that Improved

¹⁵ Khan 2004 also argues that the management of rent seeking behaviour is a critical requirement for economic development where less developed economies are trying to catch up with more advanced economies. We discuss these issues further in section 5.

governance and government capacity are critical for agricultural growth, there is not agreement on the appropriate scope and reach of state responsibilities and activities.

4.4 *Historical conclusions on changing agricultural policies*

We highlight three issues that emerge from this review of changing agricultural policies in SSA as we move forward to report on findings from more detailed consideration of agricultural liberalisation and its impacts in specific countries.

First, liberalisation is a fundamental part of agricultural policy that affects coordination in supply chains supporting intensification and change. It therefore cannot be considered separately from other elements for agricultural policy.

Second, our examination of policies in the late colonial, post independence and liberalisation eras links back to our earlier conceptual framework to highlight particular questions about the conditions under which private sector agents and 'competitive markets' can and cannot provide the coordination necessary for supply chains to work. These are related to questions about the features of different commodity production, processing and markets; communications; stages of development and the density of economic activity; institutional development; and the role and capacity of governments and other agents.

Finally, and related to this last point, we highlight the importance of matching the capacity of the state to the scope of its responsibilities, but note differing understandings of the core roles of the state according to different contexts (listed above) and different views of the causes of liberalisation's mixed and disappointing record in promoting pro-poor growth agricultural growth.

5 Political economy and the 'double trap' of state and market coordination failure in poor rural economies

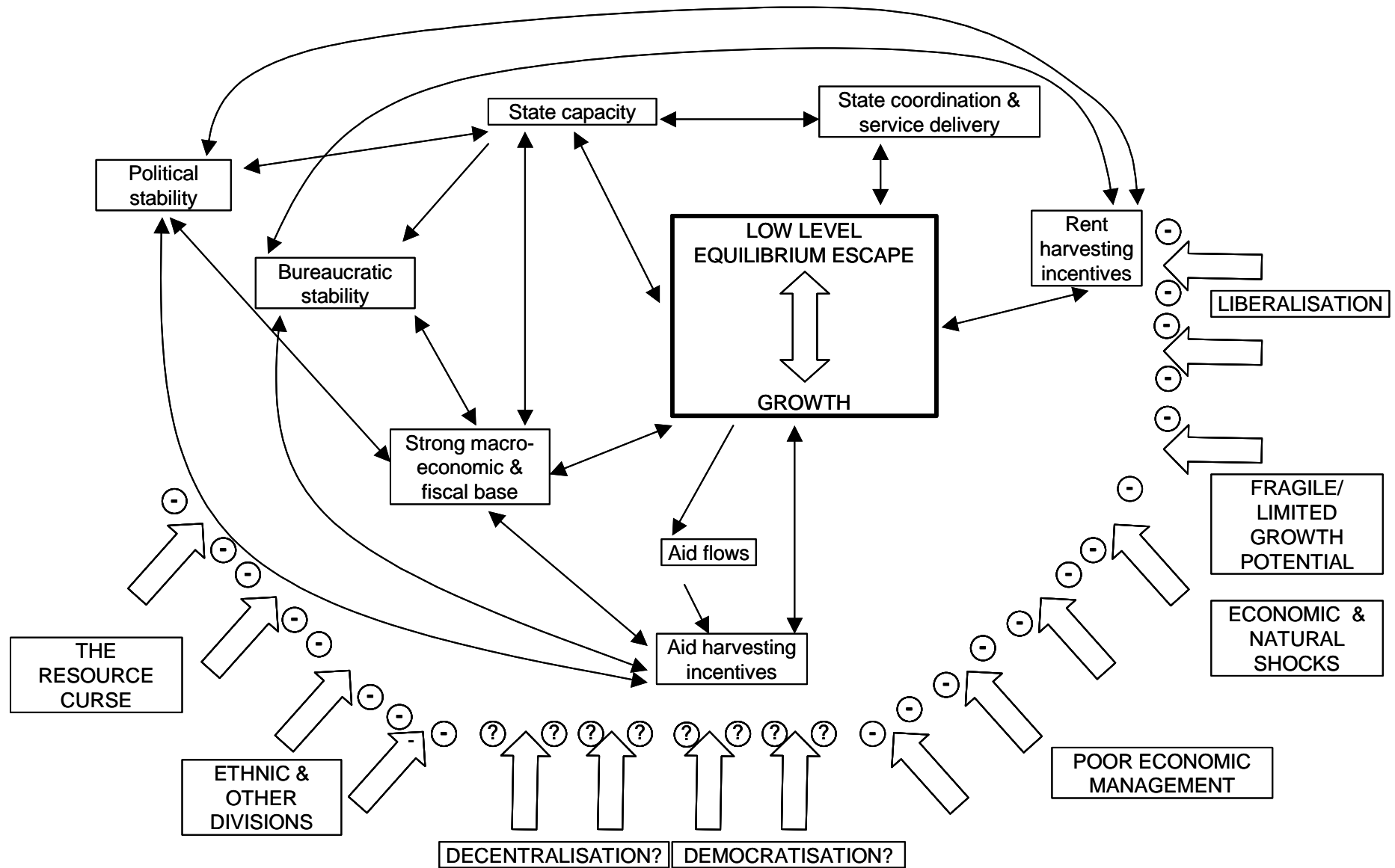
We now turn to augment the conceptual framework developed in section 3 with more explicit consideration of political economy issues affecting changes in agricultural policy in SSA over the last 50 years. Consistent with the conceptual framework presented in figure 3.2, a central place in the analysis is given to influences on rent seeking costs and risks for different stakeholders in the supply chain. We also begin to explore here how these influences affect the development and sustainability of the coordination mechanisms discussed in section 3. These influences are considered in terms of stakeholders' (or potential stakeholders') perceptions of rent seeking opportunities and of means of manipulating and developing such opportunities.

The beginning of section 4.2 briefly set out economic, ideological and political motives which encouraged many African governments to adopt more interventionist agricultural developing and marketing policies. Figure 5.1 attempts to summarise the positive feedbacks implicit in this model. At the heart of figure 5.1 effective (exogenous, extensive) state coordination breaks the low level equilibrium trap, leading to broad based economic growth and welfare improvements. This can lead to a virtuous circle of mutually reinforcing

- positive expectations from continuation of current political and economic systems
- strong fiscal and macro-economic performance and environment
- growing opportunities for 'rent harvesting' by government and politicians
- bureaucratic and political stability.

These virtuous circles are shown in figure 5.1 by the two way and circular relations among (a) the central processes of low level equilibrium escape and growth; (b) specific features of state capacity and action to promote coordination and economic management; and (c) political and bureaucratic structures and incentives to promote growth (through rent and aid 'harvesting'). An important concept here is that of 'rent harvesting' where politicians, bureaucrats and more direct supply chain stakeholders recognise the benefits of a stable and growing system and consequently (a) do not undermine the system by trying to grab high rents at the expense of the sustainability of the system and (b) are prepared to reinvest rents in complementary investments, (or at least limit rent taking below a 'sustainable yield' that leaves sufficient resources in the system for it to grow) acting as stationary bandits (as discussed earlier in section 4.3) rather than mobile bandits who grab or raid rents for immediate and short term gain without regard to the damage this causes to the economy.

Figure 5.1 The Fragile Political Economy of State Coordination and Rent Management



Seen in this way external coordination arrangements for supply chains can be viewed as common property resources, and the management of rents from these external coordination arrangements is itself another coordination problem, but this involves not just members or potential members of a supply chain, but all those with claims or potential claims on direct or indirect benefits from the supply chain and with direct or indirect control or potential control on resources invested in or generated by the supply chain. The common property resource (CPR) characteristics of non-market coordination systems are in many ways similar to those of natural resource common property systems studied extensively by Ostrom (see for example Ostrom 1990, 1999): concepts of sustainable yield, mobile and stationary stocks, and the characteristics, numbers, cohesiveness and heterogeneity of stakeholders determine the relative effectiveness of different forms of coordination. Relevant characteristics of stakeholders include their relative power, time preference for benefits, alternative sources of income, specific assets, and access to information. Box 5.1 summarises Ostrom's design principles for effective common property management systems. However, without going into a detailed and formal application of the Ostrom analysis to supply chain coordination systems, a general 'headline' conclusion from analysis of successful and failed CPR management systems is that the need for significant investments in strong exogenous enforcement of players' roles within the coordination system increases with the scope of the coordination required, the number of players in the supply chain, and difficulties in monitoring and punishing violations of coordinated rules. This suggests that there may be serious difficulties in developing external arrangements for supply chain coordination for staple food crops, given the larger numbers and variety of stakeholders in these chains. These problems may be less acute where there is significant concentration with small number of players at a critical point in the supply chain (due for example to major economies of scale at some point in the supply chain, as is the case with processing of cash crops such as sugar, cotton or tea) but there will still be other difficulties to overcome (as outlined in box 5.1) and such concentration also poses problems of potential abuse of unequal power relations within the supply chain.

Box 5.1 Design principles illustrated by long-enduring CPR institutions

1. *Clearly defined boundaries* – Individuals or households who have rights to withdraw resource units from the CPR must be clearly defined, as must the boundaries of the CPR itself.
2. *Congruence between appropriation and provision rules and local conditions* – Appropriation rules restricting time, place, technology, and/or quantity of resource units are related to local conditions and to provision rules requiring labor, material, and/or money.
3. *Collective-choice arrangements* – Most individuals affected by the operational rules can participate in modifying the operational rules.
4. *Monitoring* – Monitors, who actively audit CPR conditions and appropriator behavior, are accountable to the appropriators or are the appropriators.
5. *Graduated sanctions* – Appropriators who violate operational rules are likely to be assessed graduated sanctions (depending on the seriousness and context of the offense) by other appropriators, by officials accountable to these appropriators or by both.
6. *Conflict-resolution mechanisms* – Appropriators and their officials have rapid access to low-cost local arenas to resolve conflicts among appropriators or between appropriators and officials.
7. *Minimal recognition of rights to organize* – The rights of appropriators to devise their own institutions are not challenged by external governmental authorities.

For CPRs that are parts of larger systems:

8. *Nested enterprises* – Appropriation, provision, monitoring enforcement, conflict resolution, and governance activities are organized in multiple layers of nested enterprises.

Source: [Ostrom, 1990 #30]; p.90

How does this analysis help in understanding the evolution of agricultural marketing and development policies in Africa? We return to figure 5.1 and ask what happens if the virtuous circle is blocked in some way. This may occur for a variety of reasons, shown in figure 5.1 by the ring of block arrows impacting negatively on the virtuous circles discussed earlier. Growth may not be possible for example because of technical difficulties (agricultural technologies which are inappropriate to the agro-ecology or livelihood systems where they are being promoted); because of external shocks (price or weather), or because of inefficient and ineffective service delivery. Poor macro-economic management (with over valued exchange rates, high interest rates, high inflation, etc) may also limit growth while also constraining government capacity to act, and ethnic or other differences within a country may lead to inequitable distribution of benefits from rents and economic growth, causing some groups to perceive that their interests will be better served by 'rent raiding' or extraction rather than 'rent harvesting'. Once these processes begin, they can unfortunately reverse the virtuous cycles into spiralling vicious cycles of decline, with an increasingly fractured society and political and bureaucratic polity. Poor economic management, the 1970's oil shock, and ethnic and other conflicts were a common feature of SSA countries. Government intentions and capacity to foster coordination tended to decline, as did faith in these intentions and capacity, and so players

focussed increasingly on maximising immediate rent extraction rather than longer term and sustainable rent harvesting. The consequent decline in investment then led to increasing competition to extract diminishing rents.

The transition to market liberalisation then occurred because with diminishing opportunities for extraction of locally generated rents, aid became an increasingly important source of potential rents. Donors therefore became more significant players in the coordination game, but national political economies were strongly biased towards extracting rents from aid, rather than 'harvesting' returns from aid, and existing but dysfunctional and extractive government coordination systems became natural channels for this. The donor response was to try to remove these systems, and this then led to structural adjustment and liberalisation policies. These, however, were politically naïve and ineffective in their failure to sufficiently address the strong entrenched interests in the failed post-independence model. Constant changes in donor policy and political and bureaucratic uncertainty caused by structural adjustment policies and by democratisation pressures further increased short term incentives for rent extraction, as did the failures of liberalisation to deliver broad based economic gains. The economic naivety and ineffectiveness of structural adjustment and liberalisation policies in addressing market coordination failures has been discussed in section 3.

The economic analysis in section 3 and political economy analysis in this section therefore describe a 'double trap' of mutually reinforcing market and state coordination failure. How can this 'double trap' be broken?

Rapid and widespread change requires the unlikely success of radical and sustained political change together with the introduction and implementation of coordination systems that yield credible promise of significant and sustained benefits to the many stakeholders currently involved in rent raiding, together with severe and enforced penalties for continued rent raiding behaviour.

A more likely but slower and still fragile path out of the 'double trap' is likely to involve smaller and less ambitious but also mutually reinforcing steps (smaller and less ambitious perhaps in terms of geographical scope or number and variety of stakeholders involved) which build on 'best bet' technical and coordination opportunities to demonstrate both the benefits of success and the strength and credibility of parties committed to change. This is likely to involve concentration on systems with less challenging 'common property resource management' characteristics but with significant potential pay-offs to cooperating players. Two such suggestions for possible maize development systems are put forward in section 6 (and external investments may be needed to artificially increase pay-offs to cooperating stakeholders), and section 6 also describes existing successful tea and cotton production systems which might be used to play a similar role.¹⁶

It is also important to strengthen wider mechanisms for controlling rent seeking in state interventions. Three such mechanisms involve (a) increasing the state's external accountability to (and the voice of) the clients it is supposed to serve, (b) competition (either between states or across jurisdictions within a state) and (c) development of greater internal vision for and accountability in state activities. These may be (simplistically) characterised as voice, choice and targets, respectively.

¹⁶ It is noteworthy that these systems have characteristics that conform to some of the desing principles for CPR systems set out in box 5.1.

Weakness in each of these mechanisms for controlling rents contributed to state failure in many SSA countries in the latter part of the 20th century. Client voice was weak and generally progressively silenced not only by the widespread adoption of one party systems but also by the state attacking or subverting other potential critical voices (such as independent cooperatives and business associations). Competition between states was undermined by African governments' agreements to respect colonial boundaries and not to interfere in each others' affairs (although these agreements were no doubt important in reducing conflicts between states). Allocations of aid flows to nation states could have produced competition for aid, but lack of donor coordination and diverse objectives in aid disbursements meant that most aid allocations were not made on basis of the effectiveness of its use in delivering services to citizens. This also reduced incentives for rulers to develop a strong domestic tax base, and hence undermined the development of a key lever for the development of client voice and external accountability (**Moore, 19??**; Bates 2001). Competition across jurisdictions within states also did not occur because of strong centralising tendencies. This left vision for and internal accountability in state activities as a generally weak defence against rent-seeking, and this was generally steadily undermined¹⁷ as rent and aid 'harvesting' gave way to rent and aid raiding in the absence of the other possible restraints considered above.

Using these concepts to consider policies for the control of rent seeking in state interventions in the future, strengthening voice mechanisms seems to be critical when considering the performance of the public sector in agricultural and rural development in SSA. Fundamentally, rural development has suffered because rural people are poor, dispersed and unorganised. Hence, their numbers often do not translate into effective political influence on policies, resource flows and performance. Therefore, building stronger voice mechanisms at all levels is a priority - and one that donors should encourage. PRSPs have been an important step in this direction and farmer associations can also play a critical role. Decentralisation and democratisation offer the potential for increased voice and intra-state competition, but may also increase the short term incentives for rent and aid raiding. Donor polices can support the positive elements in both of these processes in the way that they allocate funds between and within countries. Efforts to improve governance more generally and management of state agencies in particular can also support vision for and accountability in state activities – with greater use of performance targets also contributing to increased external accountability or voice and, if used as a basis for donor funding, competition or 'choice' as well.

¹⁷ Arguably, in the case of Malawi this was sufficient to ensure relatively efficient operation of ADMARC, and of government agencies for a considerable period of time as a result of strong (deptic) leadership by Kamuzu Banda and his strong commitment to national food self sufficiency and the state coordinated maize intensification supply chain.

PART II: COUNTRY AND COMMODITY CASE STUDIES OF AGRICULTURAL LIBERALISATION IN SUB SAHARAN AFRICA

6 Case studies

6.1 Case study design

We now describe the design and rationale for selection of a set of desk studies of liberalisation impacts in different commodities in a limited number of case study countries. These desk studies involved the assimilation of information from existing sources to explore some of the issues identified in earlier sections of this paper. For each commodity studied in each country a wide range of statistics were gathered (from FAOStat, World Bank reports, and other reports obtained in country). These were examined against narratives of policy and institutional change, and related to agro-ecological, socio-economic and political conditions in each country (and in different areas in each country). Findings for each commodity in each country were then assimilated to generate general findings for each commodity across different countries, and these findings are reported below. It must be recognised that the desk study was carried out using information that could be accessed at low cost and relatively quickly in each country. Furthermore, information was not available on some critical questions about, for example, the workings of particular institutions. Assimilation of complex stories across different countries also carries difficulties and dangers, and therefore the findings presented here are restricted to fairly general and broad conclusions. Very useful lessons could, however, be learnt from more intensive study of particular 'stories' of successful institutional change with wider relevance.

Table 6.1 details the country and crop case studies examined. Selected countries are from different regions and include different agro-ecologies. They have different sizes, population densities, access to the sea, cultural and ethnic diversity, and political histories. Crops include both food crops and cash crops in which liberalisation has been important, with different patterns of regulation and liberalisation in different countries (root crops are not included as root crop markets have seldom been regulated). Section 6.2 discusses critical features of maize that justify the emphasis given to it. Three different annual cash crops were studied and three perennial cash crops with different purchased inputs and processing characteristics.

Table 6.1 Crop and commodity case studies

	<i>Food grain</i>	<i>Annual cash crop</i>	<i>Perennial cash crop</i>
<i>Malawi</i>	Maize	Tobacco, groundnuts	
<i>Zambia</i>	Maize	Cotton, groundnuts	
<i>Ghana</i>	Maize	Cotton	Cocoa
<i>Kenya</i>	Maize		Coffee, tea
<i>Mali</i>	Maize, rice	Cotton	
<i>Senegal</i>	Rice		
<i>Mocambique, Tanzania, Zimbabwe</i>		Cotton	

Drawing on issues raised in sections 2 to 4, a set of 5 questions was formulated for examination of the commodity case studies in each country:

- What services are needed for expanded smallholder production of each commodity?
- How were these services (supposed to be) provided, and was access assured & co-ordinated?
- What prices were farmers able to get, and how profitable was production of that commodity?
- What critical institutional structures & policies affected the above and the behaviour of farmers & service providers?
- What costs did these systems incur for whom, & did they have any wider costs and benefits (allowing for economic growth, fiscal costs, rent seeking, distortions).

Answers to these questions provided the material from which more general cross country observations could be made for each commodity, to which we now turn.

6.2 Maize

Maize has a number of features that make it particularly important in any study of agricultural liberalisation in SSA. It is a major semi-tradable food crop with economic, cultural and political significance in many countries. As such growth in more intensive maize production has a potential role in driving growth through both labour demanding technical change and consumption multipliers if falling prices lead to increased real incomes. However inelastic local demand and supply tend to lead to high inter- and intra- seasonal price instability. There are also many stakeholders in the maize supply chain, including poor consumers, different types of producers (large and small commercial farms and subsistence producers, large and small millers and traders, and politicians). Finally proven technologies exist for more labour and input intensive production (increasing labour and land productivity) in areas with sufficient rainfall, but these need coordinated service delivery in the supply chain involving fertilisers, seeds, seasonal finance and assured market access and prices for producers. Interlocking between players in the supply chain is, however, difficult due to the many, if small, alternative channels often open to farmers to sell maize to third parties outside the interlocking agreement.

Despite these overall features of maize, there are of course differences in the characteristics of maize between and within countries. Thus whereas maize is the dominant staple food in much of eastern and southern Africa, in West Africa greater importance of rice, millet and root crops (such as cassava and yams) reduces the importance of maize. Countries also differ in their access to the sea and to international markets, affecting the influence of world prices on domestic prices and differences between import and export prices. Within countries there are more remote and more accessible areas (affecting maize and input prices) and areas with higher and lower agro-ecological potential in maize production. Most of the production systems in the case study countries had uni-modal rainfall patterns, but Western Kenya has a bi-modal pattern (the significance of this will be discussed later). All these factors together lead to differences in supply and demand elasticity and hence price variability. Finally, countries differ in their institutional histories, affecting not only the organisational structures in the maize supply chain, but also the expectations of the different players in this chain.

We now turn to consider the outcomes of liberalisation across the different case study countries where maize was studied (Malawi, Zambia, Kenya, Ghana and Mali). In general there was poor service delivery to smallholder farmers both before and after liberalisation. An exception to this is found in Malawi in the 1980s when, prior to

liberalisation, a generally effective system of service delivery existed. The interlocking coordination system underpinning this was 'unpicked' in the process of liberalisation from the late 1980s onwards, and finally killed off by difficulties associated with the 1993 drought and 1994 transition to democracy. A general observation across all countries is that liberalisation appears to be associated with an increase in intra- and inter- season price variability. Governments have also found it very difficult to 'let go' of maize markets, for both legitimate reasons (concerns about the strategic importance of maize production and markets for food security and the economy, associated with concerns about price variability) and illegitimate reasons (the desire to take advantage of opportunities for personal and party political and economic gain through patronage and market manipulation).

Liberalisation has therefore tended to be fitful and incomplete in many countries, and those elements that have been implemented have had different winners and losers-varying between producers and consumers, between short term and long term gains and losses, between more remote and more accessible areas, between areas of high and low agro-ecological potential, and between poor and less poor people. Poor consumers have been common beneficiaries of liberalisation's tendency to promote lower prices and cheaper small scale milling, in the short term at least. Major losers from liberalisation have been poor farmers who are net consumers of maize and sell maize at harvest and buy back later in the season. These farmers suffer from higher intra-seasonal variability in prices. Large scale producers have also lost if they paid lower input prices but received higher produce prices prior to liberalisation (as tended to be the case in east and southern Africa), Less poor smallholder producers in remote or low potential areas may also have lost from liberalisation if the pre-liberalisation system actually delivered higher output prices and better access to inputs – but this may have been the exception rather than the rule, especially in the later periods immediately before liberalisation.

General lessons that emerge from this (without any attempt to identify winners or losers from liberalisation) are first that low productivity harms everyone, producers and consumers, as it prevents consumer prices from falling, leads to low returns to producers, and misses opportunities for increased labour productivity and demand to feed into pro-poor growth. Second, current small, subsistence producers need stable *maximum* prices for maize (or other staples) to enable them to stop growing maize and concentrate on higher return activities without needing to worry about sudden high maize prices undermining their food security. If access to maize at low stable prices cannot be guaranteed, or if people want to continue as subsistence maize producers for cultural reasons, then such people need improved access to services that enable them to intensify maize production. Many small 'deficit' producers would benefit from *minimum* maize prices at harvest time (when they often sell at low prices to meet immediate cash needs) and *maximum* maize prices at other times of the year when they have to buy maize back. Third, producers with the potential to grow surplus maize for the market also need access to services for the intensification of maize production, but they need would benefit from stable *minimum* maize prices to guarantee a minimum return to investments in such intensification.

What then will be the critical elements of maize supply chains that encourage productivity growth and promote improved welfare among poor consumers and producers? We suggest the following:

1. Local price stabilisation and setting with a floor price (to provide producers with a minimum return to investments in inputs for more intensive maize production) and a ceiling price (to provide consumers with assurance of protection from high prices). The floor price may damage poor consumers, in which case some form of targeted provision of cheap staple foods may be

needed, but as noted earlier the poor deficit producers may benefit from a floor price at harvest time. Declaration and enforcement of a ceiling price may not be necessary if a country is able to quickly access low cost imports.

2. Assured and improved terms of access to markets for remote high potential producers to sell into and remote consumers to buy from.
3. Seasonal finance systems which provide potentially viable producers with the seasonal working capital to purchase inputs. (While input supply systems are also weak, these are likely to grow with increased and reliable on- farm input demand. However there may be need for some temporary assistance in business training and in accessing working capital.)
4. Insurance mechanisms to protect borrowers against risks of bad weather or poor health
5. Promotion of the use of farm systems that use organic inputs to reduce reliance on purchased inputs and seasonal loan requirements
6. Improved communications infrastructure – including roads and telecommunications
7. Transparency, consistency and integrity in the management and operation of organisations involved in coordinating and/or delivering the services above, and in the political environment in which they operate

All of these requirements pose challenges in poor maize growing areas in SSA, but advocacy of floor and ceiling prices and assured market access to remote producers and consumers is perhaps the most contentious, as it may be taken to imply some state involvement in markets and thus may be seen as involving a return to the post-independence, pre-liberalisation policies of state intervention, policies that were often ineffective in delivering benefits to maize producers and consumers, while imposing huge costs on the economy as a whole. This need not be the case, however, and policy makers and other stakeholders need to look for alternative mechanisms for achieving price stability and assured market access without reliance on parastatals, with their inherent susceptibility to becoming inefficient and ineffective organisations plagued by political interference and corruption.

Finding such mechanisms is very difficult, and we are not aware of significant and robustly successful systems achieving these aims¹⁸ .. We therefore put forward two alternative models which seek to use different coordination approaches to deliver the first three 'critical elements of productivity and welfare enhancing maize supply chains outlined above.

We consider first proposals for more a extensive and 'hard' exogenous coordination system (to use the terminology of section 3.1), proposals made by Dorward and Kydd forthcoming to address very severe problems of low agricultural productivity, food insecurity and rural poverty in Malawi. They propose a system that has three basic legs

1. Stabilisation of maize prices with a minimum floor price at harvest and a maximum price ceiling at other times of the year,

¹⁸ The South African futures exchange (SAFEX) and the development of derivatives markets in agricultural commodities since 1995 does fulfil some of these functions with regard to intra- and inter-seasonal maize price stabilisation, but the limited numbers of small farmers producing surpluses means that the main beneficiaries appear to be consumers, millers and large farmers. The development of commodity exchanges in other SSA countries may have greater impacts on smallholder farmers are more significant surplus producers of maize – but these will depend upon improved storage and market linkages (including transport links) across regional markets and into world markets.

2. Protection of the interests of the food insecure and poor by providing maize handouts to the destitute, and self targeting food, cash or inputs for work for the able poor,
3. Interlocked input, finance and output purchases with inputs to farmer group members on credit repayable in maize valued at above market purchase prices (with a further quota of above market prices for sales for cash above those needed to repay loans).

Dorward and Kydd point out that a minimum floor price at harvest may benefit both less poor farmers producing maize for sale and poorer farmers who grow maize primarily for subsistence but often have to sell maize at harvest time only to buy it back later at a higher price. A relatively short time period for this floor price would also limit cross border leakages (and hence costs) as traders would have a limited time period in which to buy maize elsewhere and move it into the area. Price support to maize at harvest time would also provide maize stocks which could be used later for targeted distribution to the destitute and for defence of a price ceiling. Mechanisms for market intervention could involve support through grain banks and/or through contracts with private traders. Private firms could tender to provide grain marketing services, with separate tenders for more and less accessible areas, and clear performance targets as regards assured market access for producers and consumers. Food, cash or inputs for work programmes for the able poor would also deliver improvements in rural infrastructure.¹⁹

A critical component of these proposals is effective interlocking of (a) input delivery to farmers, (b) seasonal finance for farmers' input purchases, and (c) purchases of maize from farmers. The provision of inputs to farmers on credit repayable in maize valued at above market purchase prices provides a subsidy to more intensive production, but opportunities for input or output subsidy leakage are minimised. If coordination is established between private firms participating in the system, such that default by a farmer to any one firm leads to exclusion from credit and the subsidy system by all firms, then the system can also provide for strong incentives for credit repayment (access to both credit and subsidised input purchases/ output sales). The cost of the scheme can also be limited by providing a time limit (say 3 years) for individual farmers' participation in the subsidised credit scheme. Sustainability of the system, and longer term development benefits, can also be promoted by encouraging participating firms to continue to provide interlocked loans at (stabilised) market prices to farmers who have developed a relationship of trust in interlocked transactions during their participation in the subsidised scheme.

Dorward and Kydd make it clear that the detailed development, design and implementation of such a scheme would face many difficulties – for example in avoiding inefficiency and corruption, in developing trust, in limiting exposure to high costs in maintaining a ceiling price, and in the details of mechanisms for coordination between firms and identification of borrowers to prevent default and side-selling. Difficult questions of insurance of farmers against low yields (as a result of poor weather, pests, or family sickness, for example) also need to be addressed.

An alternative, more local and 'soft' exogenous coordination system is proposed by. They describe experience with a pilot agricultural credit scheme in western Kenya

¹⁹ Price stabilisation (the first of the three 'legs' of the proposed system) makes very stringent demands on governance has potentially high fiscal costs, and may not be practicable in many situations. The third 'leg' of the system is however what is critical to get a coordinated maize supply chain working, and this could be established at a local (eg district or even farmer association) level, and thus represent a smaller coordination systems that might be introduced as a first step on a path out of the 'double trap' of state and market coordination failure discussed in section 5.

(Sustainable Community-Based Input Credit Scheme or SCOBICS). This provides seasonal finance for (poor) subsistence producers in Western Kenya. These producers cannot afford purchased inputs for maize production and the consequent low yields mean that they have to allocate most of their land to maize production in order to produce enough maize to meet their subsistence requirements. The project aims to help them use purchased inputs for maize production, with the higher yields releasing land for cash crop production and some of the cash crop sales financing their maize input purchases. Borrowers are organised into small borrower groups and receive loans in the form of maize input vouchers which can be redeemed for specified inputs at input stockists in the area. A graduated loan repayment and loan eligibility system is being developed. In this successful (100%) repayment allows groups to expand their borrowing in subsequent years, while significant repayments of less than 100% may still allow subsequent borrowing of smaller amounts. There is a mixture of group and individual liability for loans. The graduated and mixed liability repayment system learns from systems used by informal lenders and is designed to provide stronger incentives for individual repayment.

Since maize input loan repayments are financed primarily by sales of cash crops (beans), the project has provided technical extension support in bean production as well as linking farmers with local traders to facilitate crop marketing. This scheme is interesting in the way that (a) it integrates cash and food crop production and (b) develops and adapts micro-finance systems to support maize production in a poor, if densely populated, rural area, with the need for only a small subsidy to a micro-finance provider. The system does, however, rely on a bimodal rainfall system to allow this maize/ cash crop integration, and the relatively high population density (as compared with many maize growing areas in Africa) and moderate level of economic activity also allow farmers more alternative means of raising cash (through the labour market) to pay off loans should they suffer from a crop failure.

These two examples of different scales and types of coordination system are highlighted here as relatively rare examples of potential alternatives to the parastatal based interlocking systems which were prevalent in SSA prior to liberalisation but which frequently failed to deliver effective and coordinated service delivery to support maize intensification. These need to be tested, and other systems developed.

There are then a number of important and related questions that need to be addressed in developing maize policies.

- First, it is important to establish what scale of maize productivity increases is needed for maize intensification to drive pro-poor growth, and if such increases are achievable in specific maize growing areas.
- The second set of questions concerns maize prices: there must be some idea of what minimum (floor) prices are needed at different times of year and in different places for stimulation of such maize productivity (taking account of other policy measures affecting the finance, input and output markets, and their coordination). Conversely there must also be some idea of maximum (ceiling) prices needed to protect the poor from high prices.
- A third set of questions are concerned with policy instruments - what are the roles of state, commercial and civil society organisations and what are the costs and benefits of different kinds of subsidies (taking account of development and welfare gains and losses for different target groups and for the economy as a whole and of the costs of welfare support safety nets and relief where development and growth do not occur).

- A fourth and related set of questions focus particularly on ways in which non-market coordination mechanisms can overcome the problems of national and local politicians' and administrators' propensity to interfere in markets.
- Finally, mechanisms must be found for providing seasonal finance for maize production, together with insurance systems to protect the interests of borrowers who are unable to repay their loans due to genuine misfortunes (but this must not allow or encourage wilful default).

6.3 *Rice in Mali & Senegal*

Rice in West Africa shares a number of features with maize as a staple crop of varying significance with opportunities for labour demanding technical change to increase productivity using purchased inputs and seasonal finance. It differs from maize, however, as regards irrigation opportunities and as regards the importance of rice imports in local markets.

In **Mali** there has been a steady increase in the production of modern varieties of rice as a food and cash crop on irrigated schemes. Liberalisation reduced border protection but this has been more than compensated for by the CFA devaluation. An unusual but important feature of liberalised rice production systems on the formal irrigated schemes has been the establishment of farmers groups ('associations villageoises' (AV) and 'tons villageoises' (TV) and more recently 'Economic Interest Groups' (GIE)). After initial difficulties with AVs and TVs, these now play a significant role in rice input credit and purchasing, with both the national bank and micro finance institutions involved (the former often lending to the latter, who then lend to the farmer groups).

In **Senegal** liberalisation has been more of a mixed story, with modest increases in local production and large increases in imports. The economy-wide policy framework became more favourable to producers of tradables but there have been large increases in service costs to farmers. As in Mali there has been significant growth of farmer organisations at producer, intermediary and union level – but these are still struggling to replace coordinated state-provided services and the state still finds it necessary to subsidise credit (with a maximum interest rate of 7.5% on agricultural loans and farmer contributions to financing of just 10%).

Taken together, the liberalisation in the rice sector in Mali and Senegal has benefited from improved economy-wide policies, a more gradualist approach to liberalisation, and more focus on keeping credit arrangements viable. There have, however, been real difficulties in setting up coordinated services though there has been some success with farmers' organisations. Consumers probably benefited from liberalisation, but this has been largely masked by the CFA devaluation. Milling charges have also fallen, with around 90% of production being milled by small scale private mills, but this has been accompanied by reduced quality in milling, with more detritus and reduced grading.

This more successful story is primarily based, however, in formal and medium to large irrigation schemes and direct competition between locally produced and imported rice. Here liberalised rice prices have led to rice production largely as an import substitute, and this has meant that farm-gate rice prices have gained from CFA devaluation, and they experience less instability than maize. Group based input finance systems have played a critical coordinating role, and it may be postulated that the culture of farmers on irrigation schemes favours this (as group management of water use is common) and that irrigation schemes attract more competitive

traders. Rice being cultivated away from the larger schemes (in shallow river valleys) may not have fared so well.

6.4 Cash crops

The analysis of economic coordination problems in poor rural areas suggests that the need for significant investments in on-farm seasonal inputs and in specific assets for crop production and intensification are likely to make supply chain coordination more difficult. High value crops, on the other hand, will offer greater incentives for potential investors to look for ways of overcoming coordination problems. Paradoxically, the need for very large investments in specific assets in crop processing and marketing, if potential returns are high enough, can also provide large companies with both the incentives and the means for coordinating seasonal finance, input delivery and other services to smallholder producers. Cash crops were therefore selected with varying characteristics as regards (a) investments in specific crop processing assets and (b) seasonal farm input and finance requirements.

6.4.1 Cotton (high input)

Cotton is of very considerable importance for many SSA countries. Not only is it the second most important export category after MOG (minerals, oils and gas) but it is very labour intensive and cultivated mainly by small farmers located in agronomically medium to low potential zones. So, with the exception of very recent periods when prices have been depressed by US support of its domestic producers, African cotton supply chains have tended to be internationally competitive, thereby representing the largest productive link between African farmers and the world market. Smallholder cotton production generally requires fairly significant seasonal inputs in terms of casual labour and chemicals.

Until the mid 1980s monopoly parastatals were dominant in Francophone and Anglophone countries in providing inputs and services to farmers (seeds, insecticide, fertiliser and sometimes land cultivation) and purchasing and ginning cotton, with cotton ginneries representing large investments in specific processing assets. Institutional arrangements were based on interlocking, in that farmers had few alternatives than to sell their cotton to the organisation which had provided them with services, and which recovered the cost of these services in the price paid for cotton. The Francophone parastatals tended to provide intense services (e.g. more efforts in fertiliser supply, extension, cultivation and farmer organisation) and this more expensive approach generally fostered higher yields.

Liberalisation and privatisation was introduced to the agenda by World Bank structural adjustment programmes with the argument that parastatals were inefficient, depressing the farmer share of the export price. The outcome has been that Anglophone countries have largely privatised the activity of providing input and output marketing services to smallholders. Francophone countries have tended to move more cautiously, preferring to explore the scope for contracting certain stages in the supply chain to farmers' organisations or private suppliers, but still keeping the industry within an essentially state controlled framework.

In Anglophone Africa three main patterns of cotton sector organisation have followed liberalisation: regulated local monopolies; a concentrated private sector with two or three large firms which do not compete for farmers' cotton seed during the season (and thus do not undermine each others' quality control or interlocking arrangements with farmers); and a fiercely competitive private sector with many small firms who

compete on price during the season to increase cotton purchases. Industry performance depends critically upon the development and operation of mechanisms (a) for providing fertilisers to farmers through interlocking of seasonal finance, input supply, and cotton seed purchases (as described above) and (b) for consistent grading criteria and incentives to enable and encourage farmers to improve cotton quality. Coordination among cotton buyers and between cotton buyers and farmers is critical for both interlocking and quality control, and can work in cotton sectors with local monopolies or with concentrated private sectors.

In cotton sectors with local monopolies, each company can effectively develop its own mechanisms for interlocking input supply to farmers without the threat of competition at harvest time allowing farmers who have taken inputs on credit to 'side sell' to other buyers and thus avoid repayment of their loans. Similarly standard mechanisms for quality grading can be implemented without being undermined by different (or no grading) of cotton by competing buyers.

In cotton sectors with a high degree of concentration the small number of large players share a common understanding of (a) the importance of interlocking and grading mechanisms for long-term sector development and (b) the need to behave (and in particular compete for farmers' business) in ways that do not undermine other players' interlocking and quality control mechanisms. Successful examples of such a sector is found in Zambia, and it also existed in Zimbabwe in the 1990s. In Zimbabwe, however, numerous smaller players have entered the cotton buying and ginning industry since 2001 and these new players have competed for cotton purchases on price at harvest, and as a consequence grading at buying posts has been abandoned and established interlocking input credit schemes are under threat.

Generally the privatised sectors have performed better than their state-owned predecessors in respect of indicators such as farmers' share of the world price and timeliness of payments. Furthermore, there has been investment by international companies: a pleasing instance of a smallholder based business attracting external private capital and the useful technology and marketing links that may come with linkages to large firms.

To obtain the greatest 'pro-poor growth' impacts from the cotton sector its production by smallholder farmers needs to be intensified with higher yields from higher input (and particularly fertiliser) use, effective grading is needed (to deliver higher quality and higher value output), and smallholder cotton farmers need to capture a high proportion of the profits in the supply chain. Since coordination between cotton buyers is needed to allow interlocking and grading mechanisms to increase cotton yields and quality (value), but competition between cotton buyers is needed to increase cotton farmers' share of supply chain profits, the trade-off between competition and coordination in the cotton processing sector is critical. This raises important regulatory challenges.

The objectives of regulation would include: (i) ensuring that private companies do not exploit farmers through excessive profits; (ii) the appropriate geographical scope for monopolies; (iii) possible protocols between companies if more than one operates in the same area. There are therefore strong arguments for government regulation but also strong grounds for concern that the regulation will not be performed well. Regulation needs a sophisticated understanding of the industry and of the conditions required to foster investment by service companies, and also convincing data on company performance. Furthermore, regulators need to be immune to political pressure (e.g. from farmers) to undertake actions which would fundamentally undermine the service companies and lead to their withdrawal. In summary,

governments and donors should recognise the need for regulation, but should not rush into strong regulatory regimes without careful consideration, as badly conceived or implemented regulation could slow the development of the industry. There are also differences in the challenges of regulation and in appropriate objectives, degrees and forms of regulation between the three different types of sectoral organisation described above (Poulton *et al.* 2004).

In regulating for local monopolies the state must develop and enforce clear and consistent rules regarding tendering, evaluating and re-tendering concessions. These rules should seek to generate competition *for* concessions. With regard to the terms of concession contracts, a key issue is the need to provide incentives for cotton companies to invest in interlocking arrangements with farmers (as these are often weak) and to ensure farmers are paid prices that provide them with an equitable share of supply chain profits.

In concentrated private sectors the state's most useful role is to support fora for deliberative consultation between cotton companies and farmers to promote effective and equitable interlocking and grading mechanisms. It is not clear what role the state can play if limited competition between buyers is suppressing prices paid to farmers such that the cotton buyers are capturing most of the profits in the system, as both increased competition (by the introduction of new players) and heavy handed intervention will tend to undermine farmers' and/or firms' commitment to the interlocking and grading mechanisms necessary for high yield and high value production. Excess processing capacity in the processors does tend to increase competition between large players, and the threat of entry of new firms may also help to keep farm gate prices up, but actual entry of new firms undermines coordination as discussed above.

In sectors with a large number of small players competing on price then the state needs to directly assume coordination functions to promote and defend effective interlocking and grading mechanisms with, for example, third party quality control inspection; centralized provision of seeds, chemicals and seasonal finance; and loan repayment coordinated across purchasing centres and firms.

6.4.2 Tobacco (*high input*)

Tobacco is an annual crop that needs high levels of investment in seasonal inputs. Growing and grading of tobacco does require development of substantial crop specific skills, but when compared to the investments in centralised plant required for tea factories, the scale of investments in specific processing assets is limited.

Tobacco is Malawi's principal export, and the majority of the crop is presently cultivated by smallholders on land which is theirs (i.e. land over which they have usufruct rights under traditional tenure arrangements). Prior to the liberalisation, which occurred in the early 1990s, most tobacco had been produced on large private estates. The production systems on the estates were in turn based on two systems: (i) direct supervision of employed labour which was used for flue-cured virginia tobacco where there are major asset-specific investments in on-farm processing; (ii) a "visiting tenant" system (a variant on sharecropping) under which tenant families grew and processed burley tobacco. Virginia was grown on estates largely because of the economies of scale in processing and the need for specialist and detailed managerial control over processing. In contrast, prior to liberalisation, burley was based on the visiting tenant system partly because it was prohibited on customary (usufruct land). Nevertheless, although tenants were often exploited as there was no effective regulation of the prices they were charged for inputs and paid for produce

by landlords, there were some genuine efficiencies in this system as smallholder growers were conveniently concentrated to receive inputs and technical advice.

The essence of Malawi's tobacco liberalisation involved:

- removing restrictions on smallholders growing burley;
- transforming an existing state agricultural finance agency into the Malawi Rural Finance Company, a state owned bank which was able to develop financially viable lending to smallholder tobacco farmer groups via a "stop order" system, an arrangement with the tobacco auction which give the bank first call over the sale proceeds from each farm; this in turn required
- maintenance of regulations that all burley tobacco had to be sold by registered growers through the auction system.

It is clear that the tobacco liberalisation did not represent withdrawal of the state's regulatory and direct involvement in the tobacco supply chain, but opening up of markets to allow participation by smallholders as well as previously privileged commercial estates. This liberalisation ran into very strong opposition from vested interests, which comprised indigenous African estates owners which were particularly influential in the one-party state which existed until the 1993 change to democratic government. However, the advent of democracy, allied to donor pressure (notably World Bank and USAID) led to progressive liberalisation.

The initial results were impressive: large increases in production, in parallel with the development of what appear to be sustainable institutional arrangements to support the new "own land" (or "independent") smallholder burley sector. However, production has been in decline since 1999, probably as a result of weak export prices. In addition following strenuous and largely effective efforts to prevent registered growers in Malawi from colluding with 'side selling' by other growers wishing to avoid loan repayments, the system of interlocking of finance, input and produce markets is now being undermined by increasing opportunities for 'side selling' to buyers from Mozambique and Zambia offering immediate cash without loan repayment deductions, albeit at a low price.

Initial problems in the organisation of grading were largely overcome, this mainly attributable to the development of a highly effective farmers' organisation (NASFAM). The income distribution effects have been progressive, in the sense that wealth generated in the industry has been redistributed from a small number of landlords to the top 5 to 10% of smallholders. The poor have probably also benefited via the labour market effects, as there has been a wider geographical dispersion of opportunities for seasonal labour and probably a net increase in employment. In summary success has resulted for the fact that tobacco is (generally) a high value crop and that workable commercial arrangements were devised of grading, marketing and lending. Finally, the elimination of unproductive rent generation (due to the large landlords' prior monopoly on burley) has provided sufficient potential for efficiency gains to make it worthwhile bearing the costs of institutional experimentation and innovation to support independent smallholder production. However it should be noted these involved substantial state involvement in coordination of the supply chain through regulation of a single market channel and provision of seasonal finance through a state owned bank, which itself works with farmer groups established and supported by the Ministry of Agriculture and/or a national farmer organisation originally established with donor finance, though it is working towards financial sustainability without external subsidy. .

6.4.3 *Groundnuts (low input)*

In both Malawi and Zambia groundnuts had been produced for subsistence; for local markets; and for higher value channels comprising modern processing and packaging for the domestic market and for export. Historically groundnuts had a useful role as a cash crop for those who could not grow tobacco, and were relatively pro-poor as they required modest cash outlays on seed and fertiliser (low yields can be achieved with lower seed rates using retained seed and without purchased chemicals).

Although production data are highly unreliable, it is clear that high value processing and exports fell sharply in both countries from the later 1970s, eventually collapsing completely in the case of Malawi. During this time purchases for the high value markets had been the responsibility of a parastatal (in Malawi) and a cooperative which was functionally close to being a parastatal (in Zambia). It is believed that unreliability of supply caused the loss of important niche export markets through which relatively high prices had been obtained.

Liberalisation may have been accompanied by some increase in production (data are unreliable) but higher value export channels have not been recaptured. The lack of obvious success is puzzling, and this is a crop with relatively low requirements in terms of coordination and institutional arrangements. However, there is probably a minimum threshold for volume and quality to achieve remunerative export prices, and this would require jump-starting of the industry by a significant investor. It is probable that, as with cotton, coordination among buyers is critical for improving quality. The dilemma appears to be that the larger scale private sector regards large scale intervention as too risky when compared with likely returns, while the state is unable to act, for reasons of resources and ideology. It is worth noting, however, that in Malawi production of other pulses for cash sales has benefited from the establishment of locally coordinated supply chain relationships between farmer clubs and local processor and export companies – an example of exogenous support to endogenous development of soft and local coordination mechanisms.

6.4.4 *Cocoa (intermediate input)*

By the mid-1980s the Ghanaian cocoa industry had been in long-term decline. Although quality had been maintained and there was ready demand for the commodity, production was in decline, and there was widespread smuggling to neighbouring countries where better prices were obtained. Production decline was largely a matter of weakening price incentives resulting from exchange rate overvaluation, explicit taxation via levies in the Cocoa Board, and excessive margins in a grossly over-staffed Cocoa Board. The Cocoa Board was a parastatal with a marketing monopoly and responsibility for administration of subsidies (which were insufficient compensation for low prices). Additionally, the effectiveness of research had fallen away.

The revival of the cocoa industry followed a mix of economy-wide and sector policies, although the recovery only restored production to the level of the 1960s. The key positive economy-wide measure was devaluation and the subsequent maintenance of a market-based exchange rate. At the sector level, the Cocoa Board was reformed to reduce waste and thereby raise farmers' share of the export price while research was rehabilitated followed by significant yield improvement. However the Cocoa Board has continued to control all exports – although it has signalled that private exports will be allowed when exporters meet certain conditions which none to date have been able to meet. Private companies were also allowed to buy from

farmers but with the Cocoa Board remaining as the sole exporter all cocoa purchases have been at a price fixed by the Cocoa Board, and this has removed important potential privatisation benefits from increased price competition among buyers. On the negative side, some taxation of cocoa remained in force, and subsidies were removed.

In summary, the policies resulted in early improvements, the pace of which has not been sustained. The lack of continuing dynamism can perhaps be partly attributed to rising input costs (consequent on devaluation), failure so far to develop a robust system for financing farmers' use of inputs, and lack of sufficient price incentives to induce on-farm investments in new plantings or replacement of an aging stock of trees.

6.4.5 *Coffee (intermediate/high input)*

Coffee is a perennial crop which responds well to seasonal inputs, and, in coffee pulperies, requires limited investment in specific processing assets which offer limited scale economies.

In Kenya the expansion of smallholder coffee production was a key feature of its post-Independence success, but production has fallen from a peak of 40% of exports to about 10% at present. It is worth noting that the industry has performed much less well than smallholder tea (discussed below). The proximate cause of the decline has been a collapse in yields in existing plantations by about 40% in the 1990s while the area under smallholder coffee has changed little. Yield decline is a consequence of reduced input use, which is largely explained by: (i) adverse input-output prices (resulting from poor export prices plus government cesses); (ii) declining credit availability; (iii) inefficient and high cost post-harvest services. Costs have grown in the cooperatives which own and manage the pulperies and the Coffee Board, which is the apex organisation. These organisations, which had once been tolerably efficient, had over time been eroded by factional internal politics and government corruption.

Liberalisation was introduced in 2000. The Coffee Board's export monopoly was terminated and the private sector has been allowed to enter the activities of milling, pulping, marketing and extension. It is too early to assess success.

6.4.6 *Tea (high input)*

Tea is a demanding crop in a number of ways. The costs of establishing plantations are high and subsequent performance is much affected by the quality with which this stage was performed. In the production, green leaf has to be plucked regularly, and the must go into factory processing with no more than a few hours' delay. Thus logistics are demanding, particularly so for dispersed smallholder production. The quality of the processing is also a critical determinant of value. Tea production generally requires fairly significant seasonal inputs and very significant investments in tea factories.

After Independence Kenya developed a remarkably effective smallholder tea industry under the Kenya Tea Development Authority (KTDA). Prior to recent liberalisation, KTDA effectively controlled 45 factories. Considering the tea industry's requirements for high capital investment, efficient logistics and well-managed processing, KTDA has historically been considered a huge development success story.

The essence of liberalisation has been the wresting of control over factories in favour of farmer organisations and away from the KTDA Board. The thinking behind this was that KTDA suffered from some of the rent seeking problems which were so acute in the case of the Coffee Board, and that transferring control to farmer organisation would exercise downwards pressure on processing and marketing costs in order to give farmers a higher share of the export price. So far, factory management has remained with the KTDA, although it could be argued that KTDA now has to work harder to justify its mandate.

So far the evidence about the effects of liberalisation are ambiguous. Devaluation has helped producers. Farmers have actually received a lower share of the export price, but this is probably attributable to genuine increases in the costs transport and processing.

6.5 Case study conclusions

Pulling together the main conclusions from the different crops and countries examined in the case studies, we find support for the general historical characterisation of agricultural policy change as summarised in section 4 of this report. The different problems and successes in food crops and high and low input intensity cash crops with differing processing requirements also suggest that the coordination hypotheses and concepts presented earlier in this report are valid and highly relevant to problems constraining intensification of many smallholder crops, and particularly food crops. The almost universal presence of larger market organisations (whether state, NGO, CBO or commercial organisations) in successful case studies also suggests that effective hierarchies are a necessary but not sufficient condition for supply chain coordination and market development, with large firms are a critical ingredient for coordination. This is a challenge to liberalisation policies which have left questions of structure to be determined by market competition. Different policies are then needed for food and cash crops, for high and low input crops, for crops with and without significant processing asset specificity, for high and low potential areas, for more accessible and more remote areas and countries, and for areas and countries at different stages of development and with different levels of economic activity and welfare. The need for different policies in different situations implies that it is difficult to come up with any general prescriptions for agricultural market policies in SSA. It is, however, possible to identify broad policy objectives and particular issues which policy makers and analysts need to address in defining wider approaches to agricultural market development in SSA. These are set out in the concluding section of the report.

PART III: CONCLUSIONS

7 Conclusions: Making agricultural markets work better in SSA

The wider review and particular case studies examined in this report support a growing consensus that the outcomes of agricultural liberalisation in SSA have been disappointing and that in many ways the agricultural liberalisation agenda has failed the people of Africa. This is not to argue that pre-liberalisation policies could have been sustained (in general they could not) or that they were preferable to the liberalisation policies that followed (in fact they increasingly failed to deliver marketing services while imposing large burdens on government budgets and national economies). Neither do we argue that liberalisation has not delivered any benefits – it clearly has yielded significant benefits to producers of some crops and to consumers of others. However, it has failed to deliver the benefits that its proponents promised and, particularly for producers of food crops and poorer people living in poor rural areas, it has not supported the significant and broad based agricultural transformation that is needed as a base for wider poverty reducing growth.

The review of theory and experience in this report suggest that the liberalisation agenda, as advanced by its more radical and perhaps naïve proponents, failed to sufficiently recognise and/or address core coordination problems in developing supply chains in fragmented and atomistic markets. Ironically this is illustrated not only by liberalisation's failures but also by some of its successes– as we note in section 6.3, tobacco 'liberalisation' in Malawi relied on state financed smallholder credit and a highly regulated single channel marketing system, while cotton and tea successes depend upon monopsonistic arrangements between private sector crop processors and smallholder producers. Neither of these systems represent liberalised market ideals with competitive market coordination mechanisms. Similarly more successful liberalisation in some West African systems was achieved with more pragmatic and sophisticated processes of sequential and selective dismantling of particularly problematic pre-liberalisation state structures, with the complementary strengthening of some existing or new non-market coordination mechanisms.

The extensive failures and limited successes of both state sponsored and liberalised market coordination in African agriculture over the last 40 years preclude future policy from relying on either post independence or liberalisation models for agricultural market development. New 'developmental coordination' approaches are needed that recognise the problems of endemic failures in both state and market coordination, but craft innovative institutional arrangements that provide behavioural incentives and checks for state, commercial, community based and non-governmental agents to work together in mutually beneficial, effective and efficient partnerships.

We conclude by setting out the challenges that need to be addressed in developing such 'developmental coordination' approaches to agricultural development in SSA. These challenges concern the inter-related identification of legitimate state concerns and responsibilities; of appropriate roles for state, commercial, community based and non-governmental agents; of the institutional frameworks governing these roles; and of appropriate coordination mechanisms. These have to be considered together in the context of complex and changing political, social and economic conditions, and must take account of the need for the management of difficult transitions that should follow from success – transitions from problems of managing food deficits to food surpluses; from dominance of staple food production in agriculture to increasing importance of higher value crops, horticulture and livestock; from dominance of

agriculture to increasing importance of non-agricultural activities in the rural and national economy; from dominance of state to private investment in the economy; and from economic coordination by 'atomistic relational market systems' through 'developmental coordination' to 'market and hierarchy reputational systems'.

Our conceptual framework on coordination problems in agricultural development (summarised in figure 3.2) provides some helpful initial insights to addressing these challenges. First, the relationship between marginal revenue product and the different marginal factor cost bands identifies critical issues that need to be addressed in supply chain development – more traditional concerns regarding prices (levels and transmission) and technology affect revenues and transformation costs and risks; political and economic governance structures affect rent extraction and their distribution; institutional arrangements, 'industrial organisation', the institutional environment and the density and volume of exchange affect coordination and opportunism costs and risks. These are of course related, but recognition of their distinctive contributions allows identification of different but complementary types of 'levers' for breaking out of low level equilibrium traps – through pump-priming or big push investment, through threshold shifting, and through improved supply chain coordination. The historical review and case studies provide illustrations of how different policy approaches have tended to rely heavily on limited sets of levers: post independence policies placed more emphasis on pump priming and supply chain coordination but often failed in rent management, pricing, and controlling opportunism. Liberalisation policies, on the other hand, have placed more stress on threshold shifting, initially through improved price transmission and more recently through rent reduction, but have often failed in reducing costs and risks of coordination and opportunism.

What then should be the role of the state and other agents in more nuanced policy approaches that recognise the externality and public good characteristics inherent in economic coordination in poor rural economies? Choices may have to be made in respect of trade-offs with, for example, some coordination mechanisms increasing rent seeking costs and risks (imposed by state or private agents): the challenge is then to encourage coordination systems (local or extensive, endogenous or exogenous) which are relatively efficient and equitable, where the gains from increased coordination and reduced opportunism outweigh potential increases in costs and risks of rent seeking. This requires detailed attention to the development and regulation of institutional arrangements between different agents. However regulation by the state carries its own difficulties and dangers, as states in poor rural economies face particular informational and enforcement difficulties in regulation, together with risks that regulation itself imposes new rent seeking costs and risks. Chaudhry 1993 argues that in such circumstances direct state engagement in productive or marketing activities may be more effective than attempts to regulate activities by others²⁰. This relates to a point made earlier in section 4 that the process of liberalisation often reduced not only the scope of legitimate state roles but also the strength and capacity of the state even to undertake core roles, and demands a match between the process of defining legitimate scope of state activities and the development of capacity to undertake those activities.

There are of course major political economy concerns here, as regards incentives for political and bureaucratic elites to promote rather than subvert effective institutional arrangements. Many African countries face a 'double trap' of state and market failure

²⁰ State investment to assist private sector activities may be a half-way house here, with 'pump-priming' investments (for example in construction of rural warehousing facilities for rental to private traders) also making it easier to regulate private sector agents to promote coordination and reduce opportunism.

in political and economic coordination. This is an area where rent seeking and developmental coordination trade-offs may need to be made. Weingast's 'paradox of sovereignty' is relevant here, as private agents must believe in the power of the state to act to enforce institutions, but must also believe in credible commitments by the state that it will not intervene to pursue short term political or patronage benefits. At the same time, however, policies and interventions need to be sufficiently flexible to address and match varied and changing opportunities and constraints in countries experimenting with policies, often responding to crises rather than managing change, and vulnerable to a highly uncertain natural, economic and donor policy environments. There are no simple answers to this, but a first step is to recognise the problem, and then to identify key elements for managing change. These are likely to include both local and wider actions that seek to tread a path out of the 'double trap' with an emphasis on transparency and on deliberative mechanisms that establish goals and rules for responding to and managing change, with checks and balances that restrain and penalise opportunistic behaviour by governments and donors (and their agents) as well as other stakeholders. Such mechanisms inevitably imply some mutual voluntary surrender of sovereignty. Again, institutional arrangements are critical.

Finally, it should be noted that the case studies examined in this report were inevitably limited in both depth and scope, due to the limited resources and time available. The conclusions from this work nevertheless suggest important ways forward: for further research learning from improved understanding of the impacts of different policies in different country and commodity systems; for action research investigating local and wider 'institutional innovations' to climb out of the double trap of state and market coordination failures; and for government, donor and other agents' policies and actions addressing the complex inter-relationships within this double trap.

References

- Bates, R. (1981). *Markets and states in tropical Africa*. Berkeley, University of California Press.
- Bates, R. (2001). *Prosperity and Violence : the Political Economy of Development*. New York, W. W. Norton.
- Bird, K., D. Booth and N. Pratt (2003). *Food security crisis in Southern Africa: the political background to policy failure*. London, Overseas Development Institute.
- Chaudhry, K. A. (1993). "The myths of the market and the common history of late developers." *Politics and Society* 21(3): 245-273.
- Davis, L. E. and D. C. North (1971). *Institutional Change and American Economic Growth*. Cambridge., Cambridge University Press.
- Dorward, A. and J. Kydd (forthcoming). Starter Pack in rural development strategies. *Starter Packs: A Strategy to Fight Hunger in Developing and Transition Countries? Lessons from the Malawi experience, 1998-2003*. L. S. Wallingford, CABI.
- Dorward, A. R., J. G. Kydd, J. A. Morrison and C. Poulton (forthcoming). "Institutions, markets and economic coordination: Linking Development Policy to Theory and Praxis." *Development and Change*.
- Dorward, A. R., J. G. Kydd, J. A. Morrison and I. Urey (2004). "A Policy Agenda for Pro-Poor Agricultural Growth." *World Development* 32(1): 73-89.
- Fafchamps, M. (2004). *Market Institutions and Sub-Saharan Africa: Theory and Evidence*, MIT Press.
- Fukuyama, F. (2004). *State building: governance and world order in the twenty-first century*. London, Profile Books Ltd.
- Hall, P. A. and D. Soskice, Eds. (2001). *Varieties of capitalism: The institutional foundations of comparative advantage*. Oxford, Oxford University Press.
- Jayne, T. S., J. Govereh, A. Mwanaumo, A. Chapoto and J. K. Nyoro (2002). "False Promise of False Premise? The experience of food and input market reform in Eastern and Southern Africa." *World Development* 30(11): 1967-1985.
- Jayne, T. S. and S. Jones (1997). "Food marketing and pricing policy in Eastern and Southern Africa: A survey." *World Development* 25(9): 1505-1527.
- Khan, M. H. (2004). *Strategies For State-Led Social Transformation: Rent Management, Technology Acquisition and Long-Term Growth*. Paper presented at ADB Workshop on Making Markets Work Better for the Poor, Hanoi, Vietnam 12-15 April 2004.
- Kherallah, M., C. Delgado , E. Gabre-Madhin, N. Minot and M. Johnson (2000). *The road half-travelled: agricultural market reform in sub-Saharan Africa*. Food Policy Report. Washington D C, International Food Policy Research Institute.
- Kydd, J. and A. Dorward (2004). "Implications of market and coordination failures for rural development in least developed countries." *Journal of International Development* 16: 951-970.
- Kydd, J. G., A. R. Dorward, J. A. Morrison and G. Cadisch (2004). "Agricultural Development and Pro Poor Economic Growth in Sub Saharan Africa: Potential and Policy." *Oxford Development Studies* 32(1): 37-57.
- North, D. C. (1990). *Institutions, Institutional Change and Economic Performance*. Cambridge, Cambridge University Press.
- North, D. C. (1995). The new institutional economics and third world development. *The New Institutional Economics and Third World Development*. J. Harriss, J. Hunter and L. C., Routledge.

- North, D. C. and B. W. Weingast (1989). "The evolution of institutions governing public choice in 17th century England." *Journal of Economic History* 49: 803-832.
- Olson, M. (1993). "Dictatorship, Democracy, and Development." *American Political Science Review* 87: 567-576.
- Omamo, S. W. (2003). *Policy Research on African Agriculture: Trends, Gaps, and Challenges*. ISNAR Research Report 21. The Hague, International Service for National Agricultural Research.
- Ostrom, E. (1990). *Governing the Commons*. Cambridge, Cambridge University Press.
- Ostrom, E. (1999). *Self-Governance and Forest Resource*. Occasional Paper No. 20. Jakarta, Indonesia., Center for International Forestry Research (CIFOR).
- Pingali, P. (2001). *The Changing Locus of Agricultural Research: How will the poor fare?* 74th EAAE Seminar, Livelihoods and Rural Poverty: Technology, Policy and Institutions., Imperial College at Wye, UK.
- Poulton, C., P. Gibbon, B. Hanyani-Mlambo, J. Kydd, M. Nylandset Larsen, W. Maro, A. Osario, D. Tschirley and B. Zulu (2004). "Competition and coordination in liberalized African cotton market systems." *World Development* 32(3): 519-536.
- Reardon, T., C. B. Barrett, Kelly V.A. and K. Savadogo (1999). "Policy reforms and sustainable agricultural intensification in Africa." *Development Policy Review* 17: 375 - 395.
- Williamson, J. (1994). *The Political Economy of Reform*. Washington DC., Institute for International Economics.
- Williamson, O. E. (1985). *The Economic Institutions of Capitalism*. New York, The Free Press.
- Williamson, O. E. (1991). "Comparative economic organisation: the analysis of discrete structural alternatives." *Administrative Science Quarterly* 36(269-296).
- World Bank (2000). *Can Africa Claim the 21st Century?*, World Bank, African Development Bank, United Nations Economic Commission for Africa.
- World Bank (2002). *Institutions for markets: World Development Report 2001/2002*. Washington D.C., World Bank.
- World Bank (2003). *Sustainable Development in a Dynamic World: Transforming Institutions, Growth, and Quality of Life. World Development Report, 2003*. Washington D.C., World Bank.