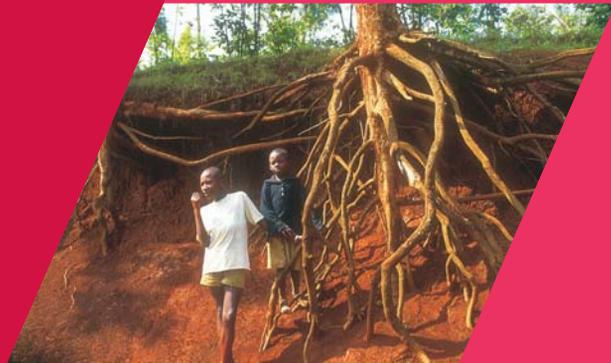


Policy Research on African Agriculture: Trends, Gaps, and Challenges

Steven Were Omamo



International Service for National Agricultural Research

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Foreword

Read this book. Not only will it give you an overview of the multitude of opinions held about the progress—or lack thereof, some will say—of African agriculture, but it also challenges many of the accepted “policy truths” prescribed by insiders and outsiders to alleviate food insecurity and boost agricultural production.

It basically tells agricultural policy analysts: "Get real!" Policy implementation issues have become "first-order" issues. Governance, politics, and power relations directly affect the farmers. These are real issues that cannot be hidden by theoretical policy analysis. Unless policy analysts add studies of implementation successes and failures to their tool kit, and look at compelling cases of institutional innovation and their historical and multidisciplinary contexts, we should treat their formula-based prescriptions for agriculture in Africa with much caution.

This message should be read carefully in the highest circles at the national level in Africa, in multi-lateral and bilateral development-assistance institutions, and among academics. Not only is the style of Were Omamo’s message unusual, its content will make you think again. Developed during his tenure at ISNAR and also based on his experience gained from ISNAR’s sister CGIAR institutions ILRI (livestock) and IFPRI (food policy), the research paper embodies new insight across disciplinary boundaries within the CGIAR system and beyond.

As ISNAR prepared this report, running it through the international peer-review process, we received commentaries from referees within and beyond Africa that can best be summed up by three words: **Read this book.**

Stein W. Bie
Director General, ISNAR

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I completed the bulk of the research that went into this report in 2000–01, during a year of residency at the remnants of my alma mater, the Food Research Institute at Stanford University. My friends and former professors, Professors Emeriti Carl Gotsch and Bruce Johnston, kindly facilitated my stay at Stanford and provided much-needed encouragement and critique, along with plenty of extremely useful advice on where to find key pieces of information.

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Steven Were Omamo

Abstract

The central argument in this report is that most policy research on African agriculture is irrelevant to agricultural and overall economic policy in Africa, and that the policy research community—and the agricultural economics profession in particular—must shoulder a significant part of the blame for this state of affairs. A wide-ranging review of recent research reveals that agricultural economists have failed to put Africa’s agricultural problems on the policy agenda in more than abstract fashions. We have failed to come to grips adequately with the real problems facing agricultural policymakers, namely, how to assess the operational feasibility of alternative policy options, and how to promote the feasibility of the most highly valued alternatives. A different approach to agricultural policy research is therefore suggested, built more on “*how*” questions and less on “*what*” questions and “*why*” questions. Implications of such an approach for research design and conduct are drawn. Piloting action research in case studies of initiatives involving promising institutional innovations offers scope for identifying convincing “*how*” answers. To implement such approaches, agricultural economists and other policy researchers require new skills and partnerships.

Abrégé

La thèse centrale de ce rapport est qu’en majorité, les recherches sur les politiques agricoles africaines ne sont pas pertinentes par rapport aux politiques économiques africaines en général, ni agricoles en particulier, et que c’est à la communauté des analystes de politiques économiques (en particulier à la profession des économistes) que revient, en grande partie, la responsabilité de cet état de fait. L’examen compréhensif de recherches récentes sur la question montre que les économistes agricoles n’ont pas réussi à porter les problèmes de l’agriculture africaine sur les programmes de politique de façon concrète. En effet, les spécialistes n’ont pas su attaquer de front les problèmes réels auxquels font face les décideurs de politiques agricoles, à savoir comment évaluer la faisabilité de mise en œuvre des différentes options politiques proposées et comment promouvoir (effectivement) la faisabilité des options retenues. Par conséquent, l’auteur du présent rapport propose d’étudier les politiques agricoles d’une façon différente - en dépassant la simple description et la recherche des causes profondes, pour davantage s’interroger sur le « comment faire ». Il présente ensuite les implications d’une telle approche pour la conception et la mise en œuvre des projets de recherche. C’est par la recherche action dans le cadre d’études de cas sur des innovations institutionnelles prometteuses que l’on pourra répondre de manière convaincante au « comment faire ». À noter que pour appliquer ces approches, les économistes agricoles et autres analystes de politiques devront acquérir de nouvelles compétences et forger de nouveaux partenariats.

Resumen

El argumento central de este informe es demostrar que la mayoría de la investigación sobre políticas agrícolas en el continente africano no son relevantes para las políticas agrícolas ni para las políticas económicas en general y que la comunidad de investigadores de políticas, y los profesionales de economía agrícola en particular, son culpables significativamente de esta situación. Una amplia revisión de la investigación conducida recientemente revela que los economistas agrícolas han fallado al exponer la problemática agrícola de África en la agenda política de forma concreta. No hemos logrado entender adecuadamente los problemas reales que enfrentan los diseñadores de políticas agrícolas, en especial, cómo evaluar la viabilidad operacional de opciones políticas alternativas, y cómo promover la viabilidad de las alternativas de más valor. Por lo tanto, se sugiere

un enfoque diferente hacia las políticas de investigación agrícola, basándose más en preguntas sobre “cómo” y menos en preguntas sobre “qué” y “por qué”. Estudios de casos pilotos utilizando la metodología de investigación de acciones que involucren iniciativas prometedoras de innovaciones institucionales ofrecen enfoques para identificar respuestas convincentes sobre “cómo”. Para implementar estos enfoques, los economistas agrícolas y otros investigadores de políticas necesitan adquirir nuevas destrezas y formar nuevas asociaciones.

Introduction

The task of explaining Africa's disturbing lack of economic growth is itself becoming a growth sector within the field of socioeconomic analysis. The "causes" of Africa's development woes are proliferating just as quickly as the analyses. They include

- inept political leadership (Gray and McPherson 2000);
- timorous political followership (Omamo 1999);
- too many people, rapidly expanding populations, living far from coastlines, facing deadly diseases (Sachs and Warner 1997; Gallup et al. 2000);
- inclement weather and inherently poor, management-intensive soils (Masters and McMillan 2000; Voortman et al. 2000);
- poor transportation and lack of physical infrastructure (Pederson 2000);
- weak business interest groups (Brautigam 2000);
- dysfunctional policies and poor international terms of trade (Collier and Gunning 1999);
- poor handling of the economic and political consequences of commodity price fluctuations (Deaton 1999);
- high transaction costs resulting from poor governance (Ndulu and O'Connell 1999; Leonard 2000);
- low overall educational levels with overinvestment in higher education and underinvestment in primary and secondary education (Schultz 1999);
- debt overhang and misguided, inward-looking development strategies (UNCTAD 2000);
- and many more.

Each of these "causes" plays a part in Africa's continued slow growth. But a consensus has yet to emerge as to which among them matter the most, where, why, and how (Sender 1999). Moreover, concrete policy solutions to resolve the troubles have yet to appear.

Either explicitly or implicitly, one culprit is almost always identified as a major contributor to the "Great African Depression" (Leonard 2000, xxiv). That culprit is African agriculture—i.e., Africa's low-productivity, sluggish, subsistence-oriented agricultural sectors.¹

Agriculture was considered to be the major culprit 10 years ago, when the problem was seen as too much public interference in agricultural production and trade (e.g., World Bank 1989). Today, even though several African countries have liberalized key agricultural input and output markets, and privatized several state-owned or state-dominated enterprises (Kherallah et al. 2000), agriculture is still the villain.

Market-oriented reforms appear to have expanded opportunities in key segments of some agricultural sectors (Ben-David et al. 2000; Byerlee and Eicher 1997; Nyoro et al. 1999; Santo and Tschirley

¹ Sender (2000) argues that most of these "pessimistic" assessments of African agriculture are actually *not* supported by the data, e.g., from the Food and Agriculture Organization of the United Nations (FAO), on which they are supposedly based. He contends that this data tells quite a different story; namely that aggregate agricultural growth rates in Africa over the last three decades have more than matched those that occurred in now advanced capitalist economies during the early stages of their industrialization. The point, of course, is that the aggregate growth rate he reports (2.34 percent between 1965 and 1995) has been outstripped by population growth rates (3 percent and above); in other words, *per capita* agricultural output has stagnated.

1999). But there is increasing evidence to suggest that they have not led to the broad-based, sustained growth in farm productivity and incomes that were anticipated, particularly among the smallholders who continue to dominate the continent's agricultural landscape (Ba et al. 1997; Friis-Hansen 2000; Kherallah et al. 2000). Within countries, dichotomies are growing between the regions and groups that have benefited from reform and those that have not. The latter category sometimes outweighs the former (Mwanaumo 1999; Tegemeo 1998). The massive government failures that provided the rationale for market-oriented reforms would appear, on the surface, to have been followed by equally massive market failures.

Disillusionment with market-based agricultural growth strategies is setting in among policymakers (e.g., Ba et al. 1997), scholars, and policy analysts (e.g., Carter et al. 1998). Although reversions to heavy state control of agricultural production and trade are unlikely, much more is required of agricultural policy than mere liberalization of given markets if sustained agricultural growth is to be achieved. Equally large challenges face agricultural policy research. Analysts cannot simply list the requirements of sound policy, or merely itemize *what* governments should do. Increasingly, the key questions appear to revolve around *how* precisely to achieve or avoid given outcomes; *how* to, say, sustainably improve smallholder farmers' access to specialized inputs and credit. Herein lies the problem, for these questions have yet to receive sustained attention from scholars and remain largely unanswered.

This report does not itself attempt to answer these questions and, indeed, it cannot do so (see the box on the facing page). Instead, it explores the nature of research that might be able to provide convincing answers to the questions.

Chapter 1 describes the results of an interpretative review of recent policy-oriented research on African agriculture, with a view to identifying major trends in this work. The aim is to identify major trends and important gaps that contribute to the continued lack of attention to the *how* question. Chapter 2 contains an interpretative literature review, which aims to identify analytical approaches that can fill these gaps. Analyses that come fully to grips with factors that determine and reflect the causes and consequences of imperfect competition in agricultural markets are found to give considerable purchase on the *how* question. In chapter 3, the implications of asking and answering the *how* question are drawn, focusing on issues in research design and conduct. The report ends with a brief discussion of broader issues and challenges.

What is “what” and what is “how”?

What is gained from asking *how*? What is lost from failing to do so? Consider the following scenario: An African delegate at a UN conference stands up and says: “We must increase the speed of development in Africa.” Another delegate replies: “But how?” A third one answers: “By promoting private sector involvement in agricultural development.”

The third person, a Member of Parliament from a West African country, returns home, and in the next session of Parliament states: “We have agreed that we must promote private-sector involvement in agricultural development.” Another Member stands up and asks: “But how?” And the Minister of Agriculture answers: “By liberalizing and privatizing markets.”

The Minister goes back to his Ministry and says: “We have decided to liberalize agricultural markets.” One of his aides asks: “But how?” Another aide says: “By reducing controls on input and output markets.”

And so on...

What more is there to the *how* question than more detail? I want to suggest that there is considerably more. Look again at the second exchange in the example above:

Member of Parliament 1: “We have agreed that we must promote private-sector involvement in agricultural development.”

Member of Parliament 2: “But how?”

Minister of Agriculture: “By liberalizing and privatizing markets.”

I venture that the Minister’s response is not a *how* answer; rather, it is a *what* answer. And it is followed by another *what* answer: “By reducing controls on input and output markets.”

A *how* answer from the Minister might go like this:

Minister of Agriculture: “We intend to liberalize and privatize markets. But we know that market liberalization and privatization are not all-purpose solutions to the problems of agricultural development in this country. Look at what happened when we liberalized and privatized the petroleum industry. Nothing changed. Fuel prices are still too high, especially for kerosene, on which our poorer citizens depend for cooking and lighting.

“The donors wanted us to depoliticize the energy sector and allow it to restructure in a pro-poor way. ‘The future will take care of itself,’ they said. But even then, we should have been able to foresee what would happen. Who was going to be most able to respond to the new environment that we created? The three most established firms, of course! We handed the entire industry over to these people without asking for anything in return. They are now entrenched, minting money on the backs of poor people. Before, when we were still in the market, at least we had some power to push them into a corner and limit price increases. Now all we can do is talk. But if we say anything, the donors beat us up. The future has not taken care of itself.

“So, given the importance of agriculture in our economy, we intend to move cautiously and selectively, paying great attention to implementation. We have some ideas, of course. For instance, with regard to privatization, my people tell me that one option is open franchise bidding. But you can imagine what that will mean for the seed and fertilizer industries, where there are high working-capital requirements. A handful of companies will dominate and we will be unable to influence them easily. Prices will be even higher than they are today, smallholders will suffer, and we will not achieve the growth we expect. So, while we want to use franchise bidding (it is by far the easiest option administratively), we will reserve it only for those industries where we are fairly sure of large net benefits, while guaranteeing some protection to smallholders. This means that we must make sure to find ways to retain some power in those industries.”

Of course, the Minister’s answer raises a host of additional questions. But the answer demonstrates that a real *how* question asks how the “what” *can be made to happen*.

Chapter I. Trends and Gaps

The flavor of current policy research on agriculture in Africa is captured in three recent additions to the literature: *Agricultural Market Reforms in Sub-Saharan Africa: A Synthesis of Research Findings* (Kherallah et al. 2000), by the International Food Policy Research Institute; *Agricultural Policy in Africa After Adjustment* (Friis-Hansen 2000), by the Copenhagen-based Centre for Development Research; and *Successes and Challenges for Food Market Reform: Experiences from Kenya, Mozambique, Zambia, and Zimbabwe* (Jayne et al. 1999), by Michigan State University's Department of Agricultural Economics under the aegis of country and regional programs of the US Agency for International Development. As their titles suggest, all three studies are concerned with the outcomes of agricultural market reform efforts in Africa, and all three are syntheses of research detailing those outcomes.

Market liberalization as “the” issue

Kherallah et al. (2000) indicate that, in almost all cases, market reform—typically designed to eliminate government control over input and output prices, eliminate regulatory controls over input and output markets, reduce exchange-rate overvaluation, and restructure public enterprises (e.g., marketing boards), reducing their involvement in pricing and distribution—has led to a significant rise in the number of traders operating in food and export markets, as well as in fertilizer markets. Greater competition and more cost-effective private-sector trading have reduced marketing margins and increased market integration. Significant numbers of farmers appear to be receiving greater shares of retail and export business. In many instances, real consumer prices have declined. However, there is overwhelming evidence to suggest that these improved price incentives have not generated the large and widespread boost to agricultural productivity anticipated by proponents of market reform. Based on these findings, and on an analysis of “remaining constraints” on African agriculture, Kherallah et al. put forward a “new agenda for agricultural market development in sub-Saharan Africa” as follows:

- fully implement market liberalization;
- provide input credit to farmers;
- develop a legislative infrastructure;
- promote smallholder production of export crops;
- invest in market development;
- provide safety nets to support vulnerable groups;
- maintain credible and sustainable macro-economic policies.

But are not questions of *how* to do these things the ones to which Ministers and Permanent Secretaries of Agriculture and Finance in Africa want answers? Surely this is the rub. Contributors to the Friis-Hansen (2000) synthesis consider fewer studies of specific reform efforts than do Kherallah et al. but go into greater depth (and thus give more thorough assessments of these programs). They concur that market reform did not achieve its stated goals, but they suggest somewhat different, and considerably more detailed, implications for policy. Even so, their policy prescriptions suffer from a similar lack of attention to the *how* question. These prescriptions include the following:

- establish institutions capable of setting relevant quality standards, adjusting them to ongoing market changes, and enforcing them upon growers;
- offer small-scale producers and traders means to increase their market power;

- increase capacity of institutions at the primary-producer level to achieve the quality premiums and integration required within increasingly externally controlled and managed supply chains;
- develop simplified procedures for protecting against dumping and countervailing duties;
- increase investment in rural transport, water, and processing infrastructure;
- abandon the current focus in research and extension on high use of external inputs and embrace instead low-external-input sustainable agriculture (LEISA);
- enact regulations that allow for diversification of sources and forms of input supply supporting agricultural production based on LEISA;
- institutionalize a perspective that views agricultural development policy as a component of rural development policy;
- abandon top-down approaches to rural development in favor of more decentralized and participatory approaches.

Jayne et al. (1999) analyze the different food policy courses pursued in recent years in Kenya, Mozambique, Zambia, and Zimbabwe. They reach four main conclusions: first, that food market liberalization has generated more successes than generally recognized; second, that the private sector's response to liberalization is sensitive to a broader range of government action than is commonly understood; third, that consumer vulnerability to price instability under liberalization has not been as severe as is often portrayed; and, fourth, that positive government actions to reduce market instability are needed. These actions should include improving transport infrastructure; promoting regional trade; expanding market information systems to cover price formation across international borders, exchange rates, and trade flows; improving communication infrastructure; nurturing development of market-oriented mechanisms for handling price risk (e.g., commodity exchanges); and alleviating constraints on private access to foreign exchange.

Again, save for the suggestion to eliminate foreign-exchange constraints, how are these goals to be achieved? To be fair, Kherallah et al. (2000) and the contributors to Friis-Hansen (2000) are largely reporting others' findings. However, like Jayne et al. (1999), they draw their own conclusions and propose their own implications for policy. Moreover, in their sharp focus on market reform and its impacts, and in their glib prescriptions for policy in the context of reform, they are far from alone.

Consider the following pieces of advice (beginning with one of the more naïve) for African policymakers concerned with the unfolding effects of market reform:

- promote commercial orientations in public institutions (Omamo and Mose 2001);
- improve governance to reduce the risks (and costs) of domestic agricultural trade (World Bank 2002);
- aim to improve private food marketing channels rather than subsidize refined products (Jayne et al. 1996);
- liberalize input procurement and delivery systems (Hassan et al. 2000);
- promote cassava as an industrial crop, and improve and reinforce its food security stabilization roles (Prudencio and Al-Hassan 1994);
- encourage structural change by policy actions and other supportive interventions, and remove barriers to market entry (Staal and Shapiro 1994);
- improve local storage and transport systems (Badiane and Shively 1998);
- disinvest less in the state and invest more in markets (Barrett and Carter 1998);
- promote access to, and use of, abrasive-disk hullers at the semi-wholesale level, promote improvements in the quality and cleanliness of the grain available to de-hullers, institute grading by grain quality in marketing systems, increase consumer information about possible savings realized on purchases of de-hulled cereals (Boughton and Reardon 1997);

- take steps to cushion small farmers against short-term adverse effects of changes in food prices (Barrett and Dorosh 1996);
- improve access to inputs and reduce the unit cost of inputs to farmers through infrastructure development, increase the productivity of fertilizer and improved seed by encouraging complementary farm-level investments, improve farmers' abilities to buy inputs using credit and nonfarm income, reduce the financial risks of purchased input use through integrated input/output markets and innovative credit schemes, evaluate the net economic benefits of selected agricultural support programs, including input subsidies (Reardon et al. 1997);
- liberalize land and labor markets eventually, but in the meantime reduce direct taxes (Winter-Nelson 1997);
- return the economics and technology of agroprocessing of coarse grains to the center of the cereals debate in West Africa, place more emphasis on the capacity of local coarse grain and domestic rice producers, and pay more attention to the informal restaurant sector (Digana et al. 1999);
- improve the functioning of the food marketing system, and, when designing safety-net programs to protect households against price surges caused by drought and other crises, take care not to disrupt the functioning of informal marketing channels (Jayne and Argwings-Kodhek 1997);
- confront the microeconomic and structural tasks of improving market instruments, infrastructure, and processing technologies (Barrett 1997);
- encourage a true collective movement to protect the integrity of food supplies for the poor and depoliticize consumers' associations (Akinides 1999);
- find mechanisms to meet the demand for fresh milk while meeting human health concerns in ways that do not impose unacceptable costs on consumers (Owango et al. 1998);
- establish food-for-work programs, access food aid, lower transport and marketing costs, undertake research to provide the private sector with information that encourages development of appropriate input supply networks, support programs that help local blacksmiths improve the quality and increase the supply of locally manufactured animal traction, design extension, credit, and input marketing policies to encourage conservation investments, and redesign input manufacturing, marketing, and credit policies (Kelly et al. 1995);
- take into account the distinct interests of, and constraints faced by, women and men, including the challenges women face in balancing their (unique) reproductive roles and their (shared) income-generating roles (Smith and Chavas 1997);
- reduce or eliminate import duties on clothing, particularly used clothing (Minot 1998).

This list is only a small sample. Selected from the major agricultural economics and economic development journals, it confirms the impression given by the Kherallah et al. (2000), Friis-Hansen (2000), and Jayne et al. (1999) syntheses. The current focus on market liberalization is too square, too close. Market liberalization is treated almost as if it is a "policy issue" in and of itself; as if it is an event and not a process; as if, as the title of the Friis-Hansen (2000) study suggests, it has a clearly discernible "before" and "after"; as if, as Kherallah et al. (2000) imply, there is one "path" to be "half-traveled" or "completed" in some implicitly deterministic sense.

But this is not the first round of market-oriented reforms that African countries have experienced (see for instance Bates 1981 and 1989; Mosley 1983; Okoso-Amaa 1975; Roberts and Isaacman 1995). There is nothing inherently different or special about the current focus—not in its justification, not in its basic design (or lack thereof), not in its stated aims, not in its seemingly catholic scope, not in its variegated and unequal impacts, and most importantly, not in its being a *reflection* (or symptom) of deeper, largely political forces shaping agricultural sectors.

Policy implications as appendages

There are, of course, many studies of policy-related issues in African agriculture that do not fall within the market liberalization genre, in all its incarnations and offshoots. But, for the most part, these studies have addressed policy issues as appendages (or asides). The analyses have been more concerned with such positive questions as:

- Do traditional land tenure systems impede the efficiency of allocation (Gavian and Fafchamps 1996)?
- What is the impact of commodity price variability on soil-conservation decisions (Winter-Nelson and Amegbeto 1998)?
- What influences nonfarm earnings of farming husbands and wives?
- Are maize markets in Ghana integrated (Abdulai 2000)?
- What effects on distribution are caused by changes in the price of rice (Barrett and Dorosh 1996)?
- What determines smallholders' cropping decisions (Omamo 1998a)?
- What are the reasons for the observed differences in economic welfare across rural households (Dercon 1998)?
- Do households keep livestock as buffer stocks to protect them against income fluctuations (Fafchamps et al. 1998)?
- What influences specialization on small farms (Omamo 1998b)?
- What is the extent of linkages between farm and nonfarm sectors and between nontradable and tradable sectors in sub-Saharan Africa, and how do these linkages shape and accelerate rural economic growth (Delgado et al. 1998)?
- How do the transaction costs of research affect brokerage (Gebre-Madhin 1999a)?
- What influences market participation decisions of milk producers (Staal et al. 2000)?

Again, there is much more of this mostly excellent work than can be listed here. However, the following samples of implications for policy emerging from some of the publications on the list only reinforces the point that there is a dearth of usable policy advice being generated aimed at improving African agriculture. For example (beginning with two of the more pretentious):

- reduce structural impediments to exchange (Omamo 1998a);
- support collective transportation of farm produce to market centers (Omamo 1998b);
- promote institutions that contain price volatility (Winter-Nelson and Amegbeto 1998);
- concentrate investments in rural nonfarm enterprises in the more densely settled pockets, rather than spreading resources more thinly (Abdulai et al. 1999);
- take steps to cushion small farmers against short-term adverse effects of changes in rice prices, design complementary or transitional policy measures in low-income countries where food consumption and production are heavily concentrated in one commodity (Barrett and Dorosh 1996);
- provide incentives for households to enter into activities with low risk or low covariance with crop income (Dercon 1998).

Africa as a laboratory

Given its myriad and persistent development problems, and given the several “experiments” in development practice that have been undertaken across the continent, Africa has presented some scholars with a real-world laboratory to explore a range of questions concerning agricultural and overall economic development:

- Under what conditions would farmers in tropical areas choose capital-led intensification paths (Clay et al. 1998)?

- How can the values of environmental resources as factors of agricultural production be measured, and how can the potential effects of various economy-wide policies on agricultural incomes be assessed in terms of environmental effects (Lopez 1997)?
- Do households smooth consumption through ethnic ties (Grimard 1997)?
- Do elderly (retired) people contribute anything to farm returns, and, if so, what (Grimard and Hamilton 1999)?
- What factors influence employment choice in labor-intensive public-works schemes (Levin and Raut 1997)?
- What are the microeconomic foundations of rotating savings and credit associations (van den Brink and Chavas 1997)?
- What are the links among structural adjustment, trade, and investment (Fielding 1997)?
- Is profit maximization an appropriate assumption about the rationale underlying smallholder production decisions (Udry 2000)?

Again, without discounting the quality or importance of these studies, they, too, illustrate how “standards of policy advice are notably lower than those required for positive analysis” (Fafchamps 1998). The above studies also recommend that policy reform should aim to reduce risk of appropriations, enhance access to land markets by reforming land laws, enhance livestock holding via intensification of husbandry, invest in extension and roads (Clay et al. 1998); intervene formally to provide old-age security (Grimard and Hamilton 1999); link labor-intensive public works with long-term and sustainable development strategies aimed at raising rural incomes (Levin and Raut 1997); and so on.

The present survey found only three papers that even raised the *how* question (Babu 1997; Babu et al. 2000; and Maxwell 1998). But even these treatments remained at an abstract level. For instance: *how* do you actually design a process that promotes greater and wider participation in policy research, design, and implementation; *how* do you decide on the stakeholders to contact initially; and *how* do you maintain their interest and commitment (Maxwell 1998)?

African farmers as natural resource managers

One relatively new and expanding thrust in policy research on African agriculture focuses on natural resource management (NRM).² The principal justification for this body of work is that adoption of improved NRM practices by the smallholder farmers who dominate the continent's rural landscape lies at the heart of sustainable agricultural intensification in Africa. Improved NRM is seen as "every bit as much about increasing productivity and incomes for the current generation as it is about preserving the quality of resources for future generations" (Barrett et al. 2000, 1). Another motivation, perhaps not surprisingly, is provided by market reform and overall structural adjustment. Specifically, the decentralized private activity in agriculture being promoted under market reform is viewed to be fundamentally incapable of preventing natural resource degradation. For the processes that drive resource degradation (and conservation) are manifest over spatial and temporal scales that extend well beyond the comprehension and concern of most people.³ Both of these features confer enormous complexity on analyses of NRM in agriculture (e.g., Barbier 1996).

Given the political climate in which NRM-oriented policy research is being undertaken—i.e., one featuring calls for reduced roles for governments in several branches of the economy—a search for options for sustainable community-based collective action in NRM lies at the core of the agenda (Baland and Platteau 1996). One of the major issues is the impact of alternative property rights regimes on patterns of resource use (Knox et al. 1998). The Consultative Group on International Agricultural Research (CGIAR) System-wide Program on Collective Action and Property Rights (CAPRI) provides a focal point for this work in agriculture. The program's objectives capture the explicit policy-orientation of the agenda: "to identify concrete policy instruments that facilitate and encourage the formation, improved functioning, resilience, and spontaneous evolution of organizations of users and property institutions that assure optimal resource use; and promote partnerships between local organizations, states, civil society, and private entities to limit duplication of effort while supporting these goals" (CGIAR-CAPRI 2000).

Baland and Platteau (1996) demonstrate that successful collective action is most likely when the boundaries for the collectively managed resource are small and clearly defined; the costs of exclusion are high; there is significant overlap between the location of the resource and the residences of its users; the users have a high demand (up to a limit) for the resource; the resource is vital for survival; the users know the level of yields that is sustainable; there are few users; the boundaries of the group are clearly defined; those who benefit from commonly held property are more powerful than those who benefit from private property; there are effective arrangements for dispute settlement;

² This thrust has at times managed to catch and hold the attention of policymakers. For instance, in the late 1990s in Kenya, Musalia Mudavadi (then Minister of Agriculture), Pedro Sanchez (then Director-General of the Nairobi-based International Center for Research on Agroforestry, ICRAF), and Cyrus Ndiritu (then Director of the Kenya Agricultural Research Institute, KARI), put together a major project to replenish soil fertility in western Kenya through phosphorus recaptalization using rock phosphate coupled with agroforestry technologies. This was rightly viewed as a major coup for Sanchez and Ndiritu. It is not mere coincidence, however, that Mudavadi's Parliamentary constituency and his rural homeland both fall within the area covered by the project. Nor is it an accident that both ICRAF and KARI had already made major investments in technology development in this area but with few tangible impacts.

³ A third view would link this research thrust to the growing prominence of NRM issues in the research programs of agricultural and development economists in richer parts of the world (e.g., C-FARE 2000; NRI 2000; ISS 2000; Wageningen 2000), many of whom are working on African development. It is worth noting the political calculations driving these NRM agendas. The challenge for agricultural economics in rich countries is to justify its usefulness to the highly urbanized societies that view rural sectors either as pristine playgrounds that should be kept that way, or as potential sources of health hazards that build up and express themselves in suburban supermarkets. The rise of food safety issues in these same agendas is clearly driven by these considerations. In this regard, note the overtly urban bias in the British government's response to the 2001 outbreak of foot-and-mouth disease.

people are concerned about their social status and reputation; rule-breaking is easy to detect and there are clear and biting punishments; and the state is unlikely to undermine locally-based authority.

This is a daunting list of requirements and one that depends on specific circumstances. There are theoretical grounds to be both optimistic and pessimistic about the scope for sustainable community-based NRM. Research in Africa is contributing much-needed empirical material on which conclusions regarding success in given circumstances can be based (e.g., Place and Otsuka 2000; Swallow 2000; Swallow et al. 2000).

But there is a problem. Almost invariably, these studies conclude that if natural resources are to be protected, it is essential that governments devise a range of policy instruments that can influence behavior in a decentralized manner. Some of these prescriptions for policy border on empty tautology, e.g., provide support for tree planting to redress the loss of forests (Place and Otsuka 2000). Others call for highly complex, nonlinear, and management-intensive measures, e.g., convert sharecropping/renting arrangements to more secure forms of tenure (Manyong and Houndekon 2000). The lack of attention given to the question of *how* its policy prescriptions are to be implemented causes even more problems for the NRM research thrust than for the others outlined above.

In summary, this section presents the results of a wide-ranging review of recent studies of agricultural policy issues in Africa. The survey suggests that the most pressing questions facing agricultural policymakers in Africa—which spring from the problem of how to design and implement sorely needed policy changes—have yet to be tackled by analysts.⁴ These questions have yet to be tackled because they have yet to be fully framed. The next section argues that these questions have not been framed, because key features of agriculture in Africa have yet to be fully acknowledged and addressed by scholars. But these features are unique neither to agriculture nor to Africa. They *have* been investigated by scholars working either in other branches of the economics literature, or in branches of the agricultural economics literature that concentrate on other parts of the world. The next section details promising and relevant avenues that have been explored in these alternative bodies of literature.

⁴ A number of colleagues reacted to the *how* question by observing that in their current jobs they have little incentive to tackle it. Their bosses would balk at it and so would the donors. Major agricultural economics and development journals would be uninterested. This is a fair comment, but it is quite telling that even in the mounds of material published without formal peer review in the electronic gray literature, the *how* question is hardly ever raised.

Chapter 2. Filling the Gaps

A few years ago, at a social gathering in Nairobi, I found myself in conversation with a fellow who informed me that he had recently embarked on a large business venture selling agricultural inputs in Kenya. The trader had broad business experience in the country, but this was his first foray into the agricultural sector. Of most interest to me was the trader's decision to locate his new business in Thika, a small town some 50 kilometers north of Nairobi, in the heart of a rich agricultural region.

"Why agricultural inputs?" I asked the trader.

"The market is open now," he replied. "There's plenty of money to be made. Even when the weather is poor, Kenyans will buy seeds, fertilizers, and what-not."

"Why Thika?"

"There are lots of bigish buyers there—you know, farmers, cooperatives, other traders."

"Do you deal with any small farmers and traders?" I asked.

"No, but I wish I could," he replied. "There's a lot of money to be made selling to the small guys—you know, small amounts to many of them. But it is too hard. They are all over the place. Right now, I have one lorry. But to deal with the small guys, I would need many more, and I would have to hire many more people. In Thika, it's easier. I have good contacts and good customers. Business is reliable."

"You give them credit?"

"Of course. That's business."

"What would allow you to sell to small guys...could you give them credit?"

"Nothing."

"No, I mean what would have to happen first?"

"I have to be able to make money."

"What would have to change for you to make money?"

"Like I said, there are too many of them, and they are all over the place. I don't like to deal with too many people. It's a shame, really; there's so much money to be made!"

"What can the government do to help you?"

"Me, I don't need any help. Business is hard, but that's usual. I know how to survive. The government should help the small guy."

"How? What kind of help?"

"To be modern. Know what I mean? He needs help to be modern."

The conversation—and the trader's perspective in particular—is intriguing in how it encapsulates the policy quandary that is African agriculture. To the trader, participation in agricultural input marketing is attractive only because it is *highly* profitable. He is getting richer, despite being a new entrant into an agricultural economy that has been struggling of late (Tegemeo 1998). To him, Kenyan agriculture effectively begins and ends in the highland areas where the country's most productive, profitable, and intensively cropped systems are to be found (Tegemeo 1998). Roads and other rural infrastructure are considerably better developed in these zones than they are elsewhere (MTC 1998).⁵ And there was never any doubt about *how* he should conduct that business once it was established.

⁵ Thika District, the area around Thika town, is one of only two districts in the country (neighboring Kiambu District being the other) with a road density that matches India's 90 km/100 km² (MTC 1998; Heisey and Mwangi 1996). In contrast, Kitui District, which comprises largely semi-arid areas, has a road density of 6.7 km/100 km² and would require an investment of at least 24 billion Kenya shillings (US\$340 million) to bring it to 90 km/100 km².

The trader's words suggest that he follows some basic rules: first, locate where demand is highest; second, use your networks to capture economies of scale at minimum cost; third, be a "biggish" supplier to a relatively small number of "biggish" buyers—i.e., compete but only up to a point; and fourth, limit transaction costs of trade, especially transport costs. He and the millions of poor, subsistence-oriented smallholders scattered around Kenya's countryside could not be further apart. Helping make these "small guys" more "modern" so that they are better able to trade with ("modern") people like him is crucial to Kenya's overall economic welfare. But that, in his view, is not his responsibility.

This conversation took place in Kenya. But I venture that it could have occurred anywhere in Africa. Replace Kenya with Uganda, Nairobi with Kampala, and Thika with Mukono or Iganga, and the same story holds. Think of Ethiopia, Addis Ababa, and Wolkite. Same thing. Imagine Nigeria, Lagos, and Ikenne. Same thing.

The conversation also lays bare how inadequate and misleading an analytical framework is the standard neoclassical paradigm for understanding and guiding agricultural policy at any time. This is especially true during a period of market liberalization. That paradigm—in which market failure is considered the exception and not the rule, despite considerable evidence to the contrary in Africa—simply assumes away this type of trader and his kind of trading behavior.

But if the dominant framework cannot adequately capture the economic world as seen and lived by this trader, is there one that can? Such a framework would need to

- take account of the causes and consequences of his drive for profit via realization of scale economies;
- allow for the "contacts" (and presumably networks) on which he relies;
- be attentive to the transaction costs he obviously wants to avoid, be these of physical or institutional origin;
- handle the imperfect competition he creates as a consequence of these contacts (and networks);
- trace the implications of that imperfect competition for farmers' and other traders' decisions, and for the kinds of (fundamentally political) aggregate phenomena that preoccupy agricultural policymakers—such as regional disparities in growth and incomes.

Increasing returns

Arthur (1988a) provides a promising starting point in the search for an alternative paradigm in noting that extant patterns of economic activity rest on the "advantages" that they confer. He claims that lying at the base of many of these advantages are "self-reinforcing processes" based on *increasing returns* (or indivisibilities) that derive from four generic sources: (1) large set-up or fixed costs, which give the advantage of falling unit costs as output increases; (2) learning effects, which act to improve products and lower their cost as their prevalence increases; (3) coordination effects, which confer advantages to "going along" with other economic agents taking similar action; and (4) adaptive expectations, where increased prevalence of an activity enhances the belief that it will become still more prevalent.

The key recognition is that, while indivisibilities and increasing returns favor relatively large production establishments, they can work simultaneously in the opposite direction by erecting barriers to entry and by limiting trade. The greater the ability of an individual, a household, a firm, or a collective to override indivisibilities associated with an activity, the greater is its ability to enter into that activity, and thus the greater is its capacity to capture related economies of scale, and vice versa.

Until recently, major gaps in understanding existed regarding several frequently observed aggregate economic phenomena—e.g., persistently disparate rates of growth and development in different countries and in different regions within countries, persistent trade in similar commodities between countries, concentrations of industrial and urban activities in certain localities but not in others, even those that seem at first to be better suited to the activities (Krugman 1996). Increasing returns and cumulative self-reinforcing processes of the kind described by Arthur appear to lie at the heart of these phenomena. Particularly important are the implications of increasing returns for the structure of markets (Matsuyama 1995), and thus for incentives toward or away from productivity-enhancing specialization in production, with a view to trading in these markets (Arrow et al. 1998; Grossman 1997; Matsuyama 1995; Yang and Ng 1993).⁶

Close readings of such pieces as Aryeetey and Udry (1997), Bardhan (1989), Pingali and Binswanger (1987), Binswanger and Rosenzweig (1986), Binswanger et al. (1989), Fafchamps (1992a), de Janvry et al. (1991), Gotsch (1972), Nerlove (1996), Udry (1995), or any other contribution to descriptions of conditions in rural areas, will reveal that increasing returns from the sources identified by Arthur, and the complementarities and cumulative processes that they imply, are likely to be as widespread in agriculture as they are in other areas of economic activity.⁷

Johnston and Kilby (1975) argue that agriculture is no different from other sectors of the economy in that specialization (and the ensuing trade) is the “mechanism” (p. 34) driving productivity growth and income expansion. This insight clearly remains on-target. But in light of Arthur’s contribution, specialization in agriculture should itself be viewed as part of a wider, cumulative, self-reinforcing process that is likely to feature increasing returns. Conversely, the observed lack of specialization in African agriculture should be seen as a function of the inability of agriculture to respond to the opportunities provided by increasing returns. This is one reason why subsistence-oriented production persists in Africa and is blamed as the “culprit” or cause of lack of development. Johnston and Kilby do indeed make this point. But they do not fully explain its microeconomic foundations. Establishing such a foundation is certainly not an aim here. Rather, the argument being put forward is that, just as it did for analyses of international trade, growth, and economic geography, a focus on increasing returns—and particularly on their implications for the structure and functioning of markets—is likely to yield valuable insight into the rationale for agricultural production and trading systems, and thus for analysis aimed at policy design and implementation to improve those systems.

While the literature in which increasing returns are made explicit has old roots (see the historiography in Arrow 2000), it is resurgent and expanding rapidly. Four recent journal articles, Ciccone and Matsuyama (1996), Krugman (1991), Murphy et al. (1989), and Rodriguez-Clare (1996), and one book, Arrow et al. (1998), capture the central ideas of the burgeoning literature. The insights emerging from these contributions rest on reasoned relaxations of strict assumptions of perfect competition (constant returns, large numbers, free entry) along with explicit consideration of a range of transaction costs over space, time, and expectations.

Murphy et al. (1989) noted that adoption and utilization of increasing returns techniques have been central to economic growth throughout history, and argue that if a country’s economy is to grow, it must somehow capture the economies of scale associated with these techniques. They consequently developed a framework in which multiple equilibria are generated in an economy featuring costly external financial and trade conditions caused by imperfect competition, and high fixed costs that

⁶ These approaches have been termed new growth, new development, and new trade theories.

⁷ For instance, Omamo (1998a) shows that large shares of staples in smallholders’ expenditure bundles combine with high farm-to-market transport costs to allow capture of nonlinear (lumpy) expenditure savings via domestic food production (i.e., food import substitution).

impede entry. Some of these equilibria imply large domestic markets that are able to generate sufficient sales to make adoption of increasing returns technologies profitable. In these types of markets, specialization-driven industrialization is possible and overall growth in the economy is rapid. In other equilibria, the converse is true; specialization and industrialization never materialize, and the economy stagnates.

Rodriguez-Clare (1996) builds on three widely accepted premises in economics: (1) productivity gains arise from specialization; (2) efficiency gains can derive from proximity of suppliers and users to certain inputs; and (3) the extent of the market limits the degree of specialization.

The author shows that a small open economy may be caught in an underdevelopment “trap.” In this case, a shallow division of labor (i.e., a low level of specialization) leads to a relatively low rate of return to capital, inducing a low level of foreign investment and weak domestic capital accumulation. This lack of capital further dampens incentives toward specialization, limiting productivity growth, blunting investment, and so on, in a self-reinforcing process that progressively affirms the shallow division of labor.

Ciccone and Matsuyama (1996) also link low levels of availability and use of specialized inputs to low levels of development. They argue that, in an economy in which specialized inputs are limited (perhaps due to trade restrictions), producers of final goods (the potential users of these inputs) are forced to employ labor-intensive alternatives, which, in turn, give small inducements to suppliers of the specialized inputs. High start-up costs imply that supply of intermediate inputs is characterized by increasing returns. Pecuniary externalities (spillovers) that would otherwise emanate from factor substitutions in the final-goods sector, do not appear. The result is a “lock-in” to the low-productivity, low-specialization equilibrium.

To explain puzzling industry location patterns, Krugman (1991) developed a model in which manufacturing firms locate in regions with high demand in an attempt to realize economies of scale while minimizing transport costs. However, the location of the demand is itself dependent on the distribution of manufacturing. A “core-periphery” pattern emerges that depends on mutually reinforcing interactions between transportation costs, economies of scale in manufacturing, and the share of manufacturing in national income (which defines overall demand for manufactured products).

In Arrow et al. (1998), a collection of essays in “new classical economics,” increasing returns are argued to be ubiquitous in economies.⁸ Resurrecting long-ignored ideas put forward by the economists Alfred Marshall and Allyn Young, several contributors argue that the extent of a market is determined not only by population size, but also by purchasing power. Purchasing power is determined by productivity, which, in turn, depends on the extent of the division of labor (specialization). The size of the market network and the degree of specialization are thus determined jointly. Economies of specialization imply nonperfect competition that imparts a “circularity” (Matsuyama 1995, 702) to economic systems and has profound implications for their functioning and stability. This cir-

⁸ Dismantling the dichotomy between pure consumers and pure producers in neoclassical economics, introducing economies of specialization and transaction costs, but retaining the methodology of individual optimization and market equilibrium, the new classical microeconomic framework (not to be confused with the new classical macroeconomics of Lucas) shows that the endogenous evolution of the division of labor based on a tradeoff between economies of specialization and transaction costs may explain such fundamental economic phenomena as the emergence of the firm and the emergence of regional and international trade. It also provides coherent explanations for such empirical regularities as increases in productivity, in trade dependence, in levels of specialization, in numbers of final and intermediate goods, in numbers of layers in hierarchical structures of transactions and cities, in degrees of production concentration, in degrees of market integration, and in degrees of production circularity. It also accounts for the emergence of professional middlemen, cities, money, unemployment, and business cycles (Arrow et al. 2000; Yang and Ng 1993).

clarity rests principally on decisions made by firms, households, and individuals over whether to enter into, or expand, given activities.

But does the point of view suggested by these contributions really add to our understanding of conditions in African agriculture? Mwanaumo (1999) and Tegemeo (1998) are two papers that offer illustrations of, and explanations for, the very common phenomenon of poorly developed markets for improved agricultural inputs alongside the persistence of diversified subsistence-oriented production systems. Their explanations are motivated mostly by arguments in Ciccone and Matsuyama (1996), Krugman (1991), and Rodriguez-Clare (1996).

Trade in most specialized agricultural inputs is characterized by significant indivisibilities and economies of scale, such as those in fertilizer trading that arise from lumpy, dispersed, and seasonally defined demand, high domestic transportation costs, and significant financing and knowledge requirements in international trade. Together, these factors produce high start-up costs to trade, rendering domestic trade imperfectly competitive at various levels and thus, by definition, constrained by the demand side. Traders in specialized inputs gravitate toward locations with potentially high demand. But even there, limited quantities are brought to market at high prices. The high prices depress the demand for the inputs as farmers economize on their use, some by pursuing diversified, subsistence-oriented production strategies that offer low returns. The low level of returns further dampens the demand for specialized inputs, which lowers incentives to increased procurement and distribution by traders, and encourages them to raise prices. The result is a self-reinforcing movement toward an equilibrium featuring limited trade in high-priced specialized inputs alongside a production systems featuring mainly limited use of improved inputs, low productivity, and low incomes. This description fits rather well with conditions in fertilizer markets and smallholder agriculture in several countries in Africa (de Jager et al. 1998; Omamo and Mose 2001; Omamo et al. 2002; Sanchez et al. 1997; Smaling et al. 1997).

Institutions

Explanations of the kind presented above may be intuitively appealing, but they lack what Machovec (1995) terms a “process perspective.” Exactly *how* do the increasing returns render markets imperfectly competitive and what kinds of imperfect competition arise? Similarly, precisely *how* is it that, as Ciccone and Matsuyama (1996) argue, start-up costs can be made to decline over time and so induce increasing specialization and self-sustaining productivity growth? *How* should the “linkages” that Rodriguez-Clare (1996) suggests are key to breaking out of an underdevelopment trap be fostered? *How*, as Murphy et al. (1989) suggest is important, can coordinated investment programs be sustained in poor countries? *How*, as Krugman (1991) argues, do weak economies of scale combine with high transportation costs to induce suppliers to locate close to markets? And *how*, as Nobel Laureate James Buchanan argues in Arrow et al. (1998), is it that “[i]n a sense, each person, who may or may not specialize, is an increasing returns facility” (p. 64)?

The growing appeal of new institutional economics (NIE) rests on its ability to provide convincing answers to these kinds of *how* questions (Menard 2000; North 1981, 1990, 1993; Williamson 2000; Williamson and Masten 1999).⁹ Understanding the nexus of institutions (formal rules and informal constraints) through which knowledge is discovered and employed to facilitate the coordination of economic activity is a basic aim in this literature, because these institutional arrangements provide

⁹ No attempt is made here to “review” NIE. Several such reviews exist in the literature (e.g., Harriss et al. 1995; Menard 2000; Williamson 2000; Williamson and Masten 1999). Rather, the aim is to examine NIE alongside other approaches (e.g., those mentioned above for growth, development, and trade) that have different analytical procedures but spring from similar assumptions.

the incentive structure of a society. Together with the technology employed, they determine the costs of production and transaction and thus total costs. Progress has sprung from NIE taking fully on board three key notions: conscious foresight (looking ahead to identify potential hazards), private opportunism (self-interest preventing disclosure of true conditions), and bounded rationality (limited cognitive abilities of human beings in general). Together, these three concepts imply that when information is specific to one recipient or circumstance, then it will have no opportunity cost. Information thus confers highly nonlinear gains to the persons (or groups) that possess it as they engage in transactions and enter into contracts, i.e., either they have it or they do not. The costs associated with information generation are basically up-front and sunk, implying indivisibilities, non-convexities, and thus increasing returns (Arthur 1988a). All of the implications for market structure, as set out above, hold true. And so does the full range of concerns associated with the implications for economic activity of alternative property rights regimes.

The NIE perspective gives further grounds for questioning the wisdom of the trend toward an NRM focus in policy research on African agriculture. For in *industrialized* countries, a significant share of published research addressing issues in property rights and collective action deals not with NRM but with “ordinary” economic activity—i.e., production, consumption, and trade in goods and services. Take, for instance, agricultural marketing cooperatives. Cooperatives are much maligned in Africa—largely because of their use (and abuse) by several past and current governments as tools to extract resources from rural areas (Bates 1981)—yet they continue to attract the attention of leading economists and agricultural economists in those countries (e.g., Cook and Iliopoulos 2000; Cotterill 1994; Griffith 2000). This attention reflects the fact that cooperatives are big players in these countries’ agrifood industries. For instance, in most European countries, cooperatives control market shares often exceeding 50 percent; in the USA, they account for US\$100 billion annually (32 percent) of commodities produced and processed in the agrifood sector (Cook and Iliopoulos 2000). Comparable figures are not available for Africa. But as Carney and Farrington (1998), Dorward et al. (1998), and Owango et al. (1998) describe, farmer cooperatives and other voluntary groups are very important players in markets for agricultural inputs and outputs in certain African countries. Given the fundamental changes taking place in Africa’s agricultural markets (Friis-Hansen 2000; Kherallah et al. 2000), and given that these groups are often deeply involved in shaping the changes (e.g., Owango et al. 1998), they deserve much more rigorous analysis than they have received so far.

The underlying motivation for these collectives is obvious: to achieve goals that each member could not meet in isolation, e.g., favorable prices for products, access to affordable credit, access to distant markets, access to specialized information. This “good” is a collective one although the property rights to it are fundamentally ill-defined. In theory, therefore, these collectives have the very same range of opportunities as collectives put together for NRM.

Three kinds of property rights-related problems arise (Cook and Iliopoulos 2000):

1. **Free-rider problems:** both external common-resource problems that arise when property rights are non-tradable, insecure, or unassigned, and internal common-property problems that arise when new members obtain the same patronage and residual rights as existing members and are entitled to the same payment per unit of patronage.
2. **Horizon problems:** when disincentives to invest in long-term projects and contribute to growth opportunities arise because members’ residual claims on the net income generated by group assets are shorter than the productive lives of those assets.
3. **Portfolio problems:** which arise when lack of transferability, liquidity, and appreciation mechanisms for exchange of residual claims prevent individual members from adjusting the group’s asset portfolio to match their personal risk preferences.

These problems have major impacts on collectives’ incentives to make the investments that will allow them to adjust to, or keep pace with, changes in the marketplace, and to survive and grow.

Again, it should be clear that these are the same issues that preoccupy explorations of sustainable collective action in NRM. The previously identified factors that influence success of collective action for NRM thus also apply here, but with more force and potentially wider scope for policy relevance (e.g., Sexton and Iskow 1993).

Imperfect competition

Only a handful of scholars have introduced issues surrounding collective action into non-NRM-oriented analyses of economic activity in African agriculture. Few have undertaken empirical studies. Fafchamps (1992a) is an important paper and represents one of the earliest attempts at a formal theoretical development. It covers a considerable amount of ground, especially with respect to the incentives and motivations of what he calls “peasant households.” But the paper’s rather unfortunate title—“Solidarity Networks in Preindustrial Societies: Rational Peasants with a Moral Economy”—and its stated motivation—to explore how mutual insurance to prevent destitution can survive despite incentive problems—appear to have limited its influence. It is both too general (“preindustrial societies”) and too narrow (“moral economy”), too abstract (“solidarity networks”) and too concrete (“destitution”). But underneath it all, Fafchamps is writing about markets in Africa and what lies behind them. However, the ideas in the paper do not appear to have taken hold among scholars studying agricultural markets in Africa. And so, for instance, in their recent analysis of smallholder cash-cropping under market liberalization—a study that included two case studies from Africa—Dorward et al. (1998) fail even to refer to this highly relevant work.¹⁰

A more recent paper, Fafchamps (in press), is somewhat more appealingly and informatively titled “Networks, Communities, and Markets in sub-Saharan Africa; Implications for Firm Growth and Investment.” The title, together with the paper’s stated motivation—to examine how relationships and networks affect market exchange in Africa—suggests that it might have a greater influence than the earlier paper on which it explicitly builds. In this paper, Fafchamps again writes about markets in Africa, but this time he is more direct. First, he notes that market exchange arguably plays a larger role in Africa than it does in developed economies, where exchange within hierarchical structures (e.g., corporations) is of prime importance. Next, he shows how the physical and institutional conditions in most parts of rural Africa mean that people face a range of transaction costs that blunt their incentives and abilities to use markets to their advantage. Some of these transaction costs are dissipated (or defrayed) as people learn more about one another, come to trust one another, and gauge each other’s reputations. But the process of building trust and forming reputations is costly and time consuming. It effectively imposes costs on farmers and rural traders that are very much along the lines of Arthur’s (1988a) fixed and indivisible set-up (or sunk) costs. These costs imply the same barriers and opportunities as other sunk costs, except that, in this case, they are offset by cost-reducing long-term relationships. Over time, multipurpose networks form around these relationships and shape market outcomes in ways that are fundamentally noncompetitive. Furthermore, there are no inherent pressures on the markets to move toward more competitive structures. The presence of networks thus greatly complicates the analysis of market competition. While network-based trade is not efficient in a neoclassical sense, policy measures that promote entry into markets in which such trade is important may not reduce prices—as implicitly assumed by proponents of such measures. Potential losses of trust- and reputation-based economies of scale within

¹⁰ Dorward et al. (1998) also fail to mention another relevant paper by Fafchamps (1992b). This omission is easier to understand as the paper does not fit with their new institutional economics perspective.

the networks confer a resilience to market structures that, although imperfect, tend to reduce transaction costs over time.¹¹

Similar reasoning underpins a number of recent analyses of rural financial institutions. But in that literature (e.g., Hoff and Stiglitz 1998), implications for commodity markets and farm production are seldom fully drawn.

In a Fafchamps-type framework, an explanation for the common African phenomenon of small markets for specialized agricultural inputs alongside persistent, diversified subsistence-oriented production patterns on small farms might proceed as follows.¹² Traders prefer to do business with people with good reputations, who they can trust to follow through on agreements and meet deadlines. So do farmers. Because establishing trust and good reputations takes time and effort (and maybe even tangible resources), it involves high sunk costs. But once trust has been established, it becomes the basis for a range of interrelated activities typically carried out within networks. There is no “market” for these contacts and thus returns to their possession will not be arbitrated away (cannot be winnowed down). New or potential entrants into a market, even those with superior technologies, will be at a disadvantage to those already in the market. But because existing suppliers have large sunk costs to cover, they charge monopsony or oligopsony prices. It is likely, therefore, that rural markets for agricultural goods and services will have few suppliers. These effects will be reinforced by conditions in input markets. Farmers are likely to need credit, and traders are likely to be the only sources of finance. For identical trust- and reputation-based reasons, there will only be a few traders who supply credit, and they will do so only at high rates of interest. A self-affirming equilibrium will arise, featuring a small number of trader-lenders advancing little credit and selling small quantities of inputs to a small number of trusted farmers, who, because the credit and inputs are dear, will also have low demand for both. This will imply low incentives for traders to expand sales and reduce costs, and they will refrain from doing so. There will be no inherent pressures on the farmers or the traders to take steps that would move the markets toward more competitive structures. Prices of both inputs and credit will remain high, implying strong incentives for farmers to economize on input-use and instead pursue subsistence-oriented production practices.

This is an intuitively appealing story. But here, what is gained from a rich “process” perspective is lost in the absence of clear implications for policy. Trust is critical precisely (and perhaps only) because competition is imperfect (Burt 1992). If trust is built and maintained in networks based on factors that are, by definition, not plain to outside observers, what can governments do to promote it? Should they try to discern the most contact-laden, network-based business groups and support their activities? More concretely, should, say, fertilizer policy in Kenya or Uganda or Malawi be built around the networks of Asian families and partners that dominate many agricultural input markets?

Clearly, both the “new growth” and the “new institutional” perspectives are on-target. But they are inadequate in isolation. Whereas one view glosses over micro details and simply assumes people will find answers to a range of knotty issues, the other focuses sharply on economic exchange *qua* exchange and thus seems to miss (or ignore) the bigger picture within which these exchanges occur. The “new growth” perspective is more “mainstream” in the prominence it assigns to natural re-

¹¹ In what might appear at first glance to be a totally different context (futures markets), Williams (1986) uses somewhat different words to make a similar point: “In the rarefied world of general equilibrium theory, markets exist for every imaginable good and service. In the real world, however, the substantial costs of operating markets keep their number to the necessary minimum. Tremendous pressure exists for one institution to do the work of two, or for two explicit markets to provide in addition the trading opportunities of a third... [But] whether a price is implicit or explicit, it performs the same economic function.” (pp. 45-46).

¹² This is an adaptation of sections in Burt (1992), Fafchamps (*in press*), and Hoff and Stiglitz (1998).

source endowments in defining economic outcomes.¹³ Demsetz (2000) argues that the question of whether natural factors on the one hand, and institutional factors emphasized by the “new institutional” school on the other, matter most, is an empirical issue that depends on specific circumstances. The main point to note is the central role played by increasing returns and economies of scale in both kinds of analyses. The implications of economies of scale for the nature of competition in markets are also of particular importance.

Agricultural economists in the world’s richer countries have long since established that imperfect competition is a fundamental feature of their agricultural input and product markets, and that this has major implications for efficiency and equity and thus for policy design and implementation (e.g., Azzam 1996; Connor and Geithman 1988; Cotterill 1990; Hamilton and Sunding 1998; Innes and Sexton 1996; Martimort 1996; Sexton and Lavoie [in press]). The basic messages to be taken from this body of work might be summarized as follows: high concentration of the markets for farm inputs and products raises the possibility that firms with market power will abuse it, to the detriment of farmers and society. By organizing *coalitions* (e.g., cooperatives) to collectively bargain with firms or integrate into trade themselves, farmers may be able to countervail this market power. But firms with market power lose money when their customers organize into coalitions and they have strong incentives to deter coalitions from forming. Government policies to encourage coalition-formation and prohibit price discrimination can potentially be effective tools to facilitate countervailing power and can potentially increase economic efficiency. In theory, governments can maximize the pro-competitive aspects of these organizations by supporting their formation in an environment of free contracting and nondiscriminatory prices. However, the desire to create countervailing power may cause excessive and inefficient entry. Free contracting and nondiscriminatory pricing are idealistic, fictional notions against which real economic activity stacks up poorly. As Fafchamps (in press) observes, short of eliminating all transaction costs, imperfect competition is a natural outcome in most markets.¹⁴

The fact that imperfect competition in agricultural markets—and especially the question of what explains observed patterns of imperfect competition in these markets—has received scanty attention in empirical studies of market liberalization in Africa and is likely to be one of the main reasons why this body of work has produced so little in the way of meaningful policy advice.¹⁵ The innovative work of Gabre-Madhin (1999a and 1999b) suggests that addressing this gap is likely to lead analysts closer to providing convincing answers to the *how* questions posed earlier.¹⁶

¹³ These endowments are interpreted broadly to include climate, topology, waterways, and other geographical conditions in addition to the more usual interpretation comprising land, labor, and capital.

¹⁴ Or, as Stigler (1965) noted, “if we were free to redefine competition at this late date, a persuasive case could be made that it should be restricted to meaning the absence of monopoly power in a market.” (p. 262). Sexton and Lavoie (in press) note that an important market imperfection is market power itself. Monopoly firms may have an incentive to integrate with downstream firms to correct distortions caused by pricing the monopolized input in excess of its marginal cost; exercise third-degree price discrimination; and eliminate the inefficiencies caused by market power at successive vertical stages. Similar incentives for upstream vertical integration are created by the existence of monopsony power. Thus firms facing market power may, by integrating vertically, not only eliminate the market power’s inefficiency or deadweight loss, but also the larger distributional loss created by monopoly/monopsony power.

¹⁵ Notable exceptions are Barrett (1997) and Leonard (2000).

¹⁶ Using a unique data set on Ethiopian grain traders’ individual search efforts, their access to capital, their trading networks, and several other variables, Gabre-Madhin finds that the costs associated with searching for a trading partner vary significantly across traders. But despite this heterogeneity, traders’ individual behavior vis-à-vis the presence of brokers is economically efficient. Brokerage thus serves the critical function of reducing transaction costs.

Agribusiness and agroindustrialization

Sensitivity to the implications of imperfect competition in agricultural markets is keen in agribusiness research (UConn-FMPC, 2000). While this research thrust—especially its more recent approach based on ideas taken from NIE (e.g., Cook and Iliopoulos 2000)—has not been applied recently in Africa, its features render it well-suited to making explicit how markets determine and reflect interactions among natural and institutional constraints on economic organization (e.g., Hackman and Cook 1998).

Lying as it does at the intersection of traditional farm management economics (with agricultural science foundations), agricultural marketing, industrial organization, finance, trade, management, and law, agribusiness research is an eclectic subfield of agricultural economics. Its core agenda covers both the nature of (imperfect) competition and its consequences for coordination and governance of agrifood industries. Given its problem-solving orientation, it has always been forced to be explicit about institutional arrangements and their potential implications (Cook and Chaddad 2000).

Several analysts (e.g., Bingen 2000; Coulter et al. 2000; Kaplinsky 2000; Lamb and Brower 2000; Raworth 2000; Salinger 2000) and institutions (e.g., the World Bank and the Canadian International Development Research Centre) are beginning to apply an agribusiness perspective in their efforts to understand fundamental questions of agricultural development. Much of this largely descriptive work aims to provide development practitioners with new ways of looking at intractable development problems. New terms are thus cropping up to describe this perspective and distinguish it from others: value chain analysis (Kaplinsky 2000), comparative advantage analysis (Salinger 2000), enterprise analysis (Raworth 2000). The important point is that at base they are concerned with the same thing, namely agroindustrialization—more specifically, its wide coverage and growing momentum in rich parts of the world but more patchy and much slower appearance in the world's poor countries. So what drives the distribution of gain and loss from (new) economic activity?¹⁷

Basic features of this work are its insistence that policy address processes of production and product development, including both intra-firm organization and the relationships between firms. These characteristics render this line of research inherently action oriented, giving it considerable traction in the unfolding debate on economic development under market liberalization.

For instance, value-chain analysis reveals that, under increasing competition pressure borne of globalization, the primary economic rents in supply chains are increasingly to be found in areas outside production. Value-chain analysis also demonstrates the intricacy and complexity of global trade. Sophisticated forms of coordination are required, not only with respect to logistics (who ships what, where, and when), but also in relation to how components are integrated into the design of new products, and quality standards for achieving this integration (Kaplinsky 2000)—in short, the governance structure of economic activity, where governance relates to alternative contractual relations.

The subject of farmer *cooperatives* and *coalitions* arises frequently in the literature (Cotterill 1990; Cook and Iliopoulos 2000; Sexton and Lavoie [in press]). Of particular importance is their potential effect on market behavior.¹⁸ The picture is blurred. Cooperatives (and other coalitions) may be procompetitive (because they have no incentive to exercise market power over their own members) or anticompetitive (if they are not willing or required to serve new members). They can inspire

¹⁷ Agroindustrialization is considered in greater detail below.

¹⁸ The following discussion of cooperatives and farmer coalitions draws largely from Sexton and Lavoie (in press).

procompetitive market outcomes if they collectively bargain with for-profit processors (but only if processing firms are able to make credible commitments to paying farmers favorable prices). However, they may themselves become instruments for the exercise of monopoly or oligopoly power, although, in general, marketing cooperatives are ill-suited to the practice of market power.¹⁹ Note, however, that even without the power to regulate sales, a cooperative may control the flow of production across alternative market outlets and engage in price discrimination.²⁰ With free entry into production of the farm commodity, successful price discrimination by cooperatives eventually leads to production in excess of the competitive output level. Actual outcomes depend crucially on existing levels of horizontal concentration and vertical coordination in agricultural sectors. These levels change with the technologies available for food and fiber processing and distribution, as reflected in differential movements across (and within) countries toward increased *agroindustrialization*.

Reardon and Barrett (2000) define agroindustrialization as comprising three related sets of changes:

First, growth of agro-processing, distribution, and farm-input provision off-farm; second, institutional and organizational adjustments in relations among agro-industrial firms and farms—such as greater vertical integration; and, third, concomitant changes in the farm sector—such as changes in product composition, technology, and sectoral and market structures.” (p. 196)

This definition is intriguing. For at base it is Johnston and Kilby’s (1975) “structural transformation” writ small—i.e., for the agricultural sector. The Johnston-Kilby definition of structural transformation is long but worth reproducing here in its entirety:

The mechanism of economic progress in farming is the same one that operates in every other sector of the economy. The mechanism is *specialization*. Not only is there specialization along specific crop lines among farmers, but a host of functions formerly carried out by the household is transferred to specialist producers. Increasing division of labor in all economic activity brings with it the opportunity for using machinery whose power, speed, and precision multiplies the yield of human effort. Specialization not only makes possible the introduction of capital equipment, it facilitates changes to better organization and more productive technologies. The result is to raise productivity of land and capital as well as that of labor. As these processes get underway, individual productive units shift from self-sufficiency to dependence on markets, both for disposal of their production and for purchase of their raw materials and factor services.

A corollary of the movement toward specialization and market dependence at the producer level is increased differentiation at the sectoral level. New manufacturing and service activities emerge. Formerly small sectors—education, medicine, financial services—are greatly enlarged. The most dominant change, however, is the proportionate decline in the agricultural sector, and the rise of the manufacturing sector. Although a substantial part of the diminution in the importance of agriculture can be attributed to the relatively greater demand for non-agricultural goods with rising incomes, the more

¹⁹ First, because their output levels are determined implicitly by the levels of production chosen through their members, and, second, because membership in cooperatives is voluntary and single cooperatives seldom control entire supplies brought to market. Thus, even if farmers collectively have market power through their cooperative, the market power will not be exercised if each farmer makes production decisions independently and competitively, and the cooperative accepts and markets all production. Without significant control of the market, attempts by a cooperative to restrict output and raise price will be undermined by free riders. Note, however, that in some cases in Africa, e.g., hot-beverage crops, membership in cooperatives has not been voluntary, and single cooperatives have controlled entire supplies.

²⁰ This is the key form of anticompetitive behavior that has been alleged against US marketing cooperatives.

fundamental cause is the transfer of function from generalist producers in the countryside to specialist firms in the towns. Such is the case of the making of clothing, utensils, furniture, weapons, jewelry, the processing of crops into food, the construction of buildings, boats, and so on. Nor is the transfer of these tasks out of the farm household limited to the production of hard goods: fetching water, gathering fuel, education, litigating, adjudicating, healing, regulating individual conduct, propitiating the Deity, waging war, and governing are increasingly turned to public utilities and oil companies, and to teachers, lawyers, judges, doctors, policemen, priests, soldiers, and congressmen. In this way, the functions of agriculture are gradually pared down to the single activity of growing raw materials.

...[E]conomic development necessarily implies structural transformation... [And] high-productivity agriculture entrains industrialization directly; it also fosters it indirectly since the specialized factor services, differentiated market networks, financial institutions, and so on, that serve farming simultaneously lead to increased efficiency in various manufacturing and service activities. (pp. 34-35).

Note how this definition reads: it could have been written by the likes of Ciccone and Matsuyama (1996) or Rodriguez-Clare (1996), and the inner logic of its arguments matches that of the new breed of development theorists.²¹ Note also how, viewed in light of the Reardon-Barrett definition of agroindustrialization, the Johnston-Kilby definition of structural adjustment suggests that uncovering the *micro details* of agroindustrialization—which is an implicit objective of agribusiness research applied to economic development (Cook and Chaddad 2000)—is insufficient. Understanding the details of competition and coordination in markets is important. But one needs also to move in the other direction, toward larger *macro factors*.

Closer examination of the Johnston-Kilby definition reveals that it, too, is another, larger process, writ small. That larger process is *modernization*, which was defined by demographer Dudley Kirk as

[a]n holistic process involving an interrelated set of social and economic changes, including education, urbanization, literacy, health facilities, communication, media, plus increases in per capita income. (Yotopoulos et al. 2000)

While modernization ultimately rests on micro details, i.e., individuals, households, firms, and communities, and the choices they make in given situations, it also hinges on much larger phenomena, which are fundamentally political in nature (Inkeles and Smith 1974). This reinforces the depth of meaning in the Thika fertilizer trader's challenge to Kenya's agricultural policymakers to help the "small guy" become "modern." If this challenge is to be met, political issues must be addressed.

Politics

Political issues seldom feature explicitly in agricultural policy research; an omission that is unfortunate, especially for Africa. Consider agricultural markets, shown earlier to have been the subject of considerable attention from agricultural policy researchers in recent years. Bates (1981 and 1989), Isaacman and Roberts (1995), Mosley (1983), Munro (1974), Roberts (1996), and many others have shown that the structure of interests that seek advantages in Africa's agricultural markets rests on the interplay of the *inherent* nature of competition in these markets (as defined, for instance by the technologies available to override key barriers to market entry and utilization) and the distribution

²¹ It is thus also open to criticism as being too broad, lacking in detail, and lacking in process: *how* exactly does all this happen?

of political power that gives competition its *actual* expression. Distributions of political power typically have distinct spatial patterns. More appropriate distribution of power across administrative provinces and districts and, of course, tribes, is thus a compelling motivation for change in agricultural institutions, including agricultural markets in Africa. Yet, such issues have rarely been raised in the numerous analyses of market liberalization in Africa.

Take maize in Kenya, for instance. Any study of maize markets is meaningless from a policy standpoint if it does not come to grips with the fact that the major problem facing food policymakers from year to year is not how to ensure that poor urban and rural families have enough to eat. Instead, the problem is how to protect the incomes of large-scale maize producers sited well inland, beyond the major consuming areas served by the port of Mombasa. High domestic transport costs and relatively low yields in large-scale maize production (as compared with those of large producers elsewhere in the world) means that maize produced by these farmers is often more expensive than that imported from international markets. Frequent reversals of decisions to abandon public grain purchases at above-market prices, maintenance of maize import duties, and outright bans on imports—even when large segments of the country face severe food shortages—are clear indications of the political power wielded by these farmers.

Take agricultural sector reform in Uganda. Assessments of Uganda's ambitious Plan for the Modernization of Agriculture (PMA) that fail to recognize the political tensions raised by the in-built horizontal (cross-sectoral) nature of the Plan, and by the central roles played by donors and civil society in the Plan's design phase, will fail to grasp the central challenges faced in implementing the Plan. Tensions emerge as agriculture's line ministry negotiates terms with the Executive branch, and with various "non-line" ministries that influence resource allocation for national development, e.g., the Ministry of Finance. A large donor role in planning and heavy donor influence in implementation means there is intense pressure to demonstrate early impact and thus little time and resources to invest in key institutional strengthening activities prior to implementation. Institutionalized involvement of civil society widens the scope for debate and disagreement on a range of implementation issues, rendering the process volatile and open to interruption.

And take agricultural growth strategies in southern Africa. To understand the dynamics of agriculture in the region, one has to understand the dynamics of the dominant country, South Africa. A major policy quandary facing other countries in the region is how to relate to their dominant neighbor. On the surface, there would seem to be significant gains from trade and R&D spillovers. But 12 years after the formal end of apartheid rule in South Africa, agriculture remains an industry dominated by well-organized, economically powerful, and thus politically influential, large-scale white farmers. Small-scale black farmers have yet to emerge from the diversified subsistence agriculture to which they were confined under apartheid. Most crucially, the white-dominated segment of South Africa's agricultural sector operates largely outside the ambit of the government, with most activity driven by market-based institutions developed during the apartheid era. Such farmers are not viewed as reliable allies and partners in transforming South Africa's own diversified subsistence-oriented smallholder subsector, let alone the smallholder-dominated agricultural economies of other countries in the region. The supposedly untapped potential of a South Africa-led regional agricultural economy must be understood in this context.

Summary and synthesis: Getting agricultural extension right

To bring together the arguments put forward in the previous sections of this chapter, consider an issue that seems at first to be rather distant from increasing returns, economies of scale, institutional innovation, markets, value chains, politics, and so on. Consider agricultural extension. Specifically, consider how African governments can provide this critical service to millions of dispersed

smallholders under conditions of sluggish growth, dwindling budgets, and weak human and institutional capacity.

As a subject matter area, extension has a long reach. Inefficiencies and inequities in all segments of an agricultural sector tend to be expressed through its extension system. A discussion of extension can quickly lead to a discussion of the major policy issues facing agriculture. And starting from any of those issues, one is soon thinking about extension (Hunter 1969; Moris 1991). Thinking through what it takes to “get extension right” in a political climate in which the public sector is being asked to downsize and streamline itself, and to simultaneously facilitate markets and get out of those same markets leads to a range of questions. The answers to these questions reach the core of the *how* question, and thus the core of the challenge facing policy research to support agricultural development in Africa.

To make the key issues concrete, consider the case of the Sustainable Community-Oriented Development Program (SCODP), an NGO working to alleviate poverty in western Kenya by helping farmers arrest and reverse soil nutrient depletion on their farms (Seward and Okello 2000). The SCODP initiative hinges on the observation that poor, liquidity-constrained smallholders cannot afford the fertilizer they need for soil nutrient replenishment if it is sold in large packages (typically 50 kilogram bags), but that they can buy fertilizer packaged in smaller quantities (between 100 and 500 grams). SCODP officials therefore weigh and package fertilizer into mini-packs for sale to farmers in regional marketplaces, schools, and churches.

The SCODP initiative is relevant here because it also focuses on improved cultural practices, e.g., planting in rows, spacing between rows, seeding rates, and timing and rate of fertilizer application. Farmers are provided with this kind of information when they purchase the mini-packs. Further, appropriate fertilizer types (i.e., those that replenish depleted nutrients most effectively) along with proper application and placement are determined through farmer-participatory research. The hope is that this improved knowledge, coupled with affordable fertilizer, will not only help farmers raise yields right away, but will also give them sufficient confidence and incentive in the future to purchase fertilizer in larger quantities. They will then be able to address nutrient depletion in their fields, increase their food supplies, and raise their incomes. Success thus depends on a fundamentally dynamic process featuring a vigorous and sustained supply response from farmers. In Arthur’s (1988a) lexicon, such a response will rely not only on *learning effects* among these farmers (i.e., effects that lead to progressive improvements in cultural practices using mini-packs), but also on *coordination effects* and *adaptive expectations* among both farmers and fertilizer traders (i.e., effects that support and reinforce the presence and prominence of mini-packs in the region).²²

Preliminary data from markets in the region where SCODP operates suggest that the dynamic process has begun to take root with sales of mini-packs rising (Seward and Okello, 2000). Whether the gains will be sustained will depend on the degree to which farmers are able to shift out of diversified subsistence-oriented production practices toward more specialized, trade-oriented ones featuring cash crops. The “rules” implied by the Nairobi fertilizer trader (locate where demand is highest; use your networks to capture economies of scale at minimum cost; be the “biggish” supplier to a relatively small number of “biggish” buyers; limit transaction costs of trade), along with the theoretical perspective supplied by Fafchamps (in press), suggest that they will have to do this in large num-

²² Note that in focusing first on *institutional* constraints on improved soil fertility replenishment, this initiative differs fundamentally from the “phosphorus-recapitalization” approach described by Sanchez et al. (1997), which is being pursued in the same part of Kenya but aims instead to directly influence the *physical* processes that in time lead to exhaustion of key soil nutrient stocks.

bers, perhaps collectively, in order to provide incentives to potential traders while capturing crucial economies of scale for themselves.

Several questions arise:

- What is the local reception to, and capacity for, collective action?
- Is there any history of voluntary collective action to achieve economic aims?
- What are the current incentives for collaboration in various activities?
- Which local institutions (formal or informal) might help override the private opportunism that could undermine collective endeavors?
- What institutions exist to help establish reliable long-term relationships between farmers and traders?
- If collective action is not feasible, what other institutional arrangements will give traders (and other participants in the marketing chain) reason to invest resources in the region?
- What if farmer demand for fertilizer does not expand sufficiently or quickly enough to elicit investments in expanded trade?
- What options might then exist, and who will exercise them?

These questions will have to be answered by SCODP and the farmers it is trying to help. They will need new information at every turn: information about new cultural practices, new inputs, new crops, new pests, new traders, new lenders, and newly relevant conditions in distant markets. They will be able to rely on traders for some, but not all, of this information. For traders will not have the incentive to tell farmers everything they know. Moreover, traders are unlikely to possess the technical information that farmers most need (Freeman 2001).

In theory, public extension and information systems should fill these gaps, but in practice, they seldom do. Most are virtually moribund, leaving farmers without access to key productivity-enhancing information about improved cultural practices and inputs.

With pressure and support from the World Bank, several experiments in extension reform are underway across Africa (Abt 2001a, 2001b, 2001c, 2001d, 2001e). The Bank's model of extension reform places contracting of extension services at the center of these efforts (Rivera et al. 2000). However, there are reasons to question the wisdom and practicality of that strategy.

Just as an assumption of well-functioning, competitive markets for agricultural inputs and products underpinned expectations about likely responses to liberalization of these markets, so, too, does a vision of a "market for extension services" underpin the Bank's evolving strategy in this area. This is curious in itself, but especially so given current experience with agricultural market liberalization in Africa. That experience has largely defined the *limits* on agricultural markets on the continent: major capital and infrastructural constraints on their development; very high transaction costs, especially in smallholder regions; and, as a result, several noncompetitive elements in such markets.²³

Rivera et al. (2000) list the essential requirements for efficient operation of a contracted extension system: continuity of extension officers, continuous and timely contribution of resources by the funding source, a systematic extension methodology with a defined and validated technology package, an efficient administrative operation with on-time allocation of payroll, a rigorous system of personnel selection, and a continuous and tight monitoring system. Few, if any, of these conditions currently hold in most African countries.

²³ This insight comes from John Lynam of the Rockefeller Foundation (personal communication).

The Bank's implicit assumptions appear to be that a demand-led competitive contracting process will provide internal correction to chronic underinvestment in institutional and human capacity; overcome high transaction costs; override the lack of tested extension methodologies; fill the need for adaptive tailoring of most technology components in the rain-fed, low-input farming systems predominant in Africa; and circumvent the absence of well-developed structures for institutional learning.²⁴ These assumptions are certainly not grounded in fact. They appear to spring more from doctrinaire application of market principles in a political climate that promotes and is affirmed by the free-market mantra.

That conclusion is reinforced by the two main messages from the SCODP example. First, the demand side is crucial, i.e., demand not only for improved inputs, but also demand for new information. The World Bank is very much on-target in this respect. Second, the probability of efficient and sustained adoption of improved inputs is greatly increased when distribution of these inputs is tied with targeted information dissemination. The demand for new information itself derives from new demands for improved inputs (and related services such as credit), which, in turn, spring from changes in output mixes, which are dependent on shifts in production patterns toward those that use improved inputs and services more intensively.

However (and this defines the central gap in the Bank's strategy), the SCODP example clearly demonstrates that the appearance of these various interrelated demands *and supplies* is automatic only in college textbooks. First, a number of *inherently imperfectly competitive markets* for inputs and outputs must appear where, for concrete economic reasons, they are still absent. Second, the implications of imperfect competition for the range of processes that generate demand and supply of extension services must be assessed. And third, if possible, these processes must be influenced in ways that blunt farmers' and traders' motives to accommodate high transaction costs in trade by withdrawing from those markets and pursuing livelihood strategies featuring diversified subsistence-oriented production practices.

Again, the question is *how*? Not only for extension reform, but also for a number of other policy reform thrusts for which the same conclusions hold in their entirety.

²⁴ Again, these insights come from John Lynam.

Chapter 3. Asking and Answering *How* Questions

It is tempting to move now to a discussion of “an agenda” for policy research on African agriculture to list key issues or questions on which agricultural policy analysts should focus, maybe based on a neat diagram showing a comprehensive conceptual framework. But that would contradict a basic theme in this essay, namely that institutional responses to policy initiatives are vital. Such responses are fundamentally context-specific. To speak of an agenda for policy research on African agriculture makes little sense. If anything, there should be multiple agendas, but to imagine the likely compositions of all the agendas would make even less sense. The issue in this essay is less about agricultural policy research agendas and more about a research approach that can be built into any such agenda.²⁵

To that end, I want instead to address three questions that have been lurking just beyond view throughout the essay: What precisely does it mean to ask *how*? What does it mean to answer? Most important, what does asking and answering *how* questions imply for research design and conduct?

My answers draw from an eclectic body of literature. The multidisciplinary nature of that literature suggests a similar approach to answering *how* questions. My answers also pull in material appearing in the box at the end of the Introduction. I therefore ask you to reread the box prior to proceeding to the next section.

Power-cognizant narratives

The boxed text sets out differences between *what* answers and *how* answers and concludes that asking *how* means asking how the *what* can be made to happen. In a seminal work exploring how to increase the relevance and impact of social scientific research, Flyvbjerg (2001) tackles this problem and suggests that in addressing any policy issue, analysts ask themselves four questions. First, in which direction are we moving? Second, who gains and who loses under this dynamic, and how, i.e., by which mechanisms of power? Third, is this dynamic desirable? And fourth, if not, what should be done, and how i.e., by which mechanisms of power? More colloquially: What is actually going on out there, in the countryside? Who are the key players, why, and for how long? Which groups are doing well, where, and why? Which ones are doing poorly, where, and why? What are the principle mechanisms of power in agriculture? In short, what is the big picture, and what are the details that make it up? Asking *how* therefore begins with a historical and power-cognizant narrative analysis.

The problem is, compelling narratives on Africa’s agricultural sectors are virtually nonexistent. Such analyses are time-consuming and difficult to complete. Advanced training in social scientific research typically assures that most analysts are unable even to envisage such work, let alone undertake it (Flyvbjerg 2001). And it is often difficult to sell the idea of such work to traditional patrons of agricultural research. Not surprisingly, therefore, the literature survey on which the previous two chapters were based did not yield a single recent equivalent of early- and mid-20th century writings that provided catholic yet nuanced (albeit sometimes highly racially prejudiced) portrayals of African agricultural economies (e.g., Fitzgerald 1934; Neumark 1957; Stamp 1953).²⁶ Many of the conclu-

²⁵ This insight comes from Harris Mule, a senior policy advisor and consultant in Kenya (personal communication).

²⁶ Anthony et al. (1979) comes close.

sions reached in these works, such as the relative inefficiency of small-scale farmers compared to large-scale, were later forcefully discredited (e.g., Hunter 1973; Johnston and Mellor 1961; Schultz 1978). But these refutations were highly productive and informative. They still underpin major programs of agricultural research and development, not just in Africa, but across the globe. Such progress would have been impossible without the narratives. There is little such guidance for today's agricultural policy analyst interested in knowing the directions in which agriculture in given countries or regions is moving, if these directions are desirable, who gains and who loses under these dynamics and why, if something should be done about the distribution of gain and loss, and, if so, by what mechanisms of power.

We are caught in a self-reinforcing situation in which lack of attention to the *how* question ensures the continued absence of these big pictures. Historical, power-cognizant narratives are the way forward. Without them, analysts will remain stuck. We will continue to have no foundation on which to build empirical studies to answer the *what* questions (and *why* questions) that lead to clearly framed *how* answers. And we will continue to have no narrative justifications for such work: justifications that are crucial to perception and interpretation in positive social science (Abbott 1992).²⁷

Ex post hazards

A key insight from the boxed text is that in formulating *how* answers the objective should not be to provide *how to* answers in a prescriptive (normative) sense, but rather to build descriptive (positive) pictures of implementation processes. This implies looking forward with two distinct aims: first, to evaluate policy alternatives *ex ante*; and second, to uncover, and fashion responses to, *ex post* hazards facing given alternatives.

Policy analysts are typically adept at completing *ex ante* evaluations of alternative policy options, but these options are seldom compared on the basis of *ex post* hazards. Analysis of implementation falls to consultants asked to monitor and evaluate on-going initiatives. Recommendations for change appearing in consultancy reports often come too late to make a difference.

Arguing that this situation is wasteful and avoidable, Williamson (2000) shows that the outcomes of most policy initiatives depend what happens *ex post*, i.e., once implementation commences. The policy-relevant analysis will uncover key *ex post* hazards, and, most crucially, distinguish ideal but impossible outcomes from possible but flawed ones.

In the story in the box, the ideal but impossible outcome would be a fully liberalized and privatized propoor energy (or seed, or fertilizer) industry. The Minister's comments hint at a possible but flawed outcome, which would be in keeping with the value of protecting the welfare of poor citizens. He suggests that it might be possible for the government to retain some power in markets and exercise that power in ways that promote the welfare of poor citizens. One can imagine many possibilities. For instance, firms bidding for control of a privatizing company might be required to present credible strategies to expand poor households' access to particular services and products at affordable rates, perhaps in return for a commitment from the government to allow market prices to

²⁷ Recognizing that power relations are important means identifying the values of major stakeholders (including those of the analysts themselves), making these values explicit, and reconciling value positions with power relations, where power is viewed not as restrictive, negative, and concentrated (e.g., Bates 1981 and 1989), but rather as productive, positive, and diffuse (e.g., Flyvbjerg 1998). And it means advocating value-based alternatives from a wide set of possibilities. In the box, a basic value guiding the Minister's *how* answer is that of protecting the country's poor citizens from the negative welfare effects of privatization and liberalization. The Minister also makes it clear that alternative approaches imply different power relations, and that those differences have major implications for accommodating this value.

prevail in other market segments. The resulting ranking of bidders would end the ex ante analysis and analysis of ex post hazards would then begin.

Assessing ex post hazards requires defining operational feasibility, which means specifying likely responses to initiatives by key stakeholders. The illustrative power of the brief story in the box does not extend this far. But a clear message from the story is that existing governance structures and processes define operational feasibility.

Governance and operational feasibility

The recent emphasis put on good governance by major development organizations reflects growing recognition of ex post implementation issues (e.g., World Bank 2002). Again, the distinction between the ideal and the actual is crucial. Ideal systems adapt quickly and effectively to disturbances of all kinds. Actual ones experience trade-offs. Identifying and explaining these trade-offs is therefore important.

Many calls for improved governance are based on the ideal. They seldom address trade-offs and thus are silent on the crucial issue of operational relevance. For instance, consider again reform of agricultural extension systems. Privatization of moribund public research and extension systems may indeed lead to greater efficiency. Greater farmer participation in technology development may enhance relevance and thus encourage greater adoption and utilization of research outputs. Greater decentralization of research capacity, greater reliance on market processes, and greater investment in adaptive research capacity relative to that in applied and strategic research may encourage the “demand-side” of agricultural technology “markets.”

But what happens when, as in an increasing number of countries, these new principles are collapsed together and implemented in tandem? What are the theoretical and, more importantly, the empirical foundations of such strategies? Selective reference to the free market ideal is dubious. Market processes are generally weak in directing the emergence and selection of radically new technological and institutional systems of the sort envisioned in the new model. When the process of innovation is highly exploratory—as is clearly the case with institutional reform—its direct responsiveness to economic signals is unpredictable (Dosi 1988).

Lapses into ideal but operationally irrelevant reasoning can be avoided by recognizing that it is impossible to do better than one’s best, by insisting that all organizational forms under consideration meet the test of feasibility, by symmetrically exposing the weaknesses as well as the strengths of such forms, and by describing and costing out the mechanisms of any proposed reorganization (Williamson 1994). Such precautions seem reasonable, transparent, and beyond dispute. But they are seldom respected because the supporting analysis is seldom completed.

But even when such analysis is completed, there is still more to be done. Where operationally feasible alternatives to existing arrangements are identified, would they yield *real* net gains if introduced, i.e., as opposed to *hypothetical* net gains that compare actual structures and organizations with hypothetical ones? Clearly, large disparities between actual and hypothetical gains signal opportunities. However, preoccupation with hypothetical gains puts operational irrelevance at risk. Real costs must be assessed in relation to real choices. The central issues revolve around how alternative arrangements will actually work in practice, and which plausible assumptions support prospective net gains within particular institutional contexts. Unless one is able to make such assumptions, it must be concluded that even the most severe inefficiencies cannot be overcome (Williamson 1994). These considerations make it clear that a principal task of the policy analyst is to

explain and cost out, prior to implementation, the implications of alternative *institutional innovations*.

Institutional innovation

Building on Coase's (1972) distinction between institutional environments and institutional arrangements, Williamson (1994 and 2000) offers a theory of institutional innovation in which the comparative efficacy of alternative modes of institutional arrangements (i.e., governance structures and processes) varies. On the one hand, it varies with the policy and institutional environment (macro features) and on the other, with the attributes and behavior of economic actors (micro features). Conditions (and changes) in the institutional environment define (and shift) the comparative costs of governance, which reflect and define behavior at the micro level.

Comprehending such complexity and drawing out general lessons and insights is a demanding task. But consider again the case of SCODP in light of Williamson's three-level scheme.

Let us recall the argument that SCODP's success depends on *learning effects* among farmers that lead to progressive improvements in cultural practices using mini-packs, and on *coordination effects* and *adaptive expectations* among both farmers and fertilizer traders that support and reinforce the presence and prominence of mini-packs in the region. This is a reasonable argument, given the aims of the initiative. But a more basic question facing SCODP—and indeed any effort in eastern Africa aiming to replenish soil fertility through increased use of fertilizer—is how to increase smallholders' access to fertilizer cost-effectively *under conditions of liberalized trade in the input*.

The high transport cost of fertilizer relative to its price implies that scale economies in trade are captured very early in the marketing chain. Most trade in fertilizer therefore occurs at the retail level. A major constraining macro feature is thus the unavoidable fact of high farm-gate fertilizer prices under any feasible arrangement for market-based fertilizer procurement and distribution.

There is some scope to reduce key transaction costs in fertilizer trading. But these reductions are second-order in terms of their micro-level impacts on farm-gate prices and production costs (Omamo 2002; Wanzala 2001). First-order micro impacts under the current macro-institutional environment appear to rest in institutional innovations in key *output markets* (Robbins and Ferris 2002). The most promising of these innovations appear to hinge on institutional arrangements that aid collective action among smallholders and promote adoption of agribusiness management tools by both farmers and traders (Dorsey and Muchanga 2000, Fafchamps and Gabre-Madhin 2000).

At base, therefore, SCODP and other such initiatives are de facto answers to *how* questions. Some work, some do not. Either way, they offer largely untapped scope for learning about the potential of alternative institutional arrangements in African agriculture and for building badly needed narrative pictures of what Flyvbjerg (2001) would term agriculture's alternative futures.

Piloting case studies

This is more than a call for better monitoring and evaluation (M&E) of initiatives like SCODP. Rather, while better M&E is almost always needed (Woodhill 2000), this is a call for piloting action research that views these initiatives as case studies of larger phenomena. In the case of SCODP, the larger issue is how demand from smallholders for improved technologies and better information can be mobilized via markets, and what are the residual roles for public sectors given the likely imperfectly competitive structures of those markets.

In such an approach, opportunities are taken to improve the initiatives under study, and outcomes of actions are used to inform further analysis (e.g., Edquist et al. 2000). Two types of action are possible: *indirect* actions (e.g., those aiming to influence “framework conditions” of agricultural policy, including the institutional context) and *direct* actions (i.e., initiatives and interventions to create new processes of innovation). For SCODP, indirect actions might focus on legal and regulatory frameworks influencing soil fertility management innovation systems, with a view to formulating recommendations and guidelines for improving these frameworks in ways that will benefit the smallholder. Direct actions might focus on costs and returns to alternative systems of smallholder soil fertility management, aiming to increase profitability within these systems.

The following excerpt from Ragin (1992) captures the essence of what might be achieved from a case study approach:

Two main problems social scientists face as empirical researchers are the equivocal nature of the theoretical realm and the complexity of the empirical realm. As researchers, our primary goal is to link the empirical and the theoretical—to use theory to make sense of evidence and to use evidence to sharpen and refine theory. This interplay helps us to produce theoretically structured descriptions of the empirical world that are both meaningful and useful. “Casing” is an essential part of the process of producing theoretically structured descriptions of social life and of using empirical evidence to articulate theories. By limiting the empirical world in different ways, it is possible to connect it to theoretical ideas that are general, imprecise, but dynamic verbal statements. In this perspective, a case is most often an intermediate product in the effort to link ideas and evidence. A case is not inherently one thing or another, but a way station in the process of producing empirical social science. Cases are multiple in most research efforts because ideas and evidence may be linked in many different ways. (pp. 224-225)

Case studies that yield policy-relevant results are thus likely to be those that do not seek statistical generalizations but aim rather for analytical ones. The object is not to select representative cases from which to generalize directly to a wide universe of other cases. Rather, fruitful cases are likely to be those selected to permit findings to be generalized in terms of key practical outcomes. The search is thus for *common problems* that take specific forms in particular situations, and for *alternative solutions* that are specific to particular situations but which may, in principle, be transferred to others. The aim is to avoid treating complex phenomena as if they are *incidents* and *events*, but rather as institutionally embedded *processes* with distinct histories that need to be carefully uncovered.²⁸

Multidisciplinarity and the network perspective

Mainstream agricultural economics—and the survey methods used to provide data to test its maintained hypotheses—dominates agricultural policy analysis. By now, it should be clear that economics in general, and agricultural economics in particular, cannot alone provide an adequate conceptual and organizing framework for piloting action research oriented case studies. The phenomena under study are likely to be too few in number and too poorly defined over space and time to permit standard model-building and hypothesis-testing. In many cases—agricultural extension reform, for instance—the central questions may be best framed by sociologists, political scientists, and historians, with agricultural economists playing secondary, supporting roles.

²⁸ This perspective also makes it difficult to view institutions merely as “rules of the game” able to be derived for a game-theoretic exercise, or to propose that their effects can simply be reduced to the parameterization of otherwise standard economic processes (Dosi 2000).

Network analysis represents a promising perspective. For it can illuminate both the institutional architecture of industries and the patterns of competition and cooperation within them (Powell and Smith-Doerr 1994). And it can promote collaboration across disciplines within the social sciences (e.g., Boahene et al. 1999) and between the social and biophysical sciences (e.g., Johnsen et al. 1995): collaboration that is crucial to producing convincing *how* answers (Flyvbjerg 2001).

The central point in the network perspective is that actors do not behave or decide as atoms outside a social context. Nor do they adhere slavishly to a script written for them by the particular intersection of social categories that they happen to occupy. Their attempts at purposeful action are instead embedded in concrete, ongoing systems of social relations (Granovetter 1985). Edquist et al. (2000) demonstrate that the network idea can be very useful in economic policy analysis when used, not to model the minutiae of individual economic behavior (as is becoming increasingly common in economics), but rather to build broad understanding of the organizational structure and functioning of *systems* of economic activity. For instance, from a network perspective, the question is not so much “how do markets work” but rather how markets, collective initiatives, and the public sector *interface* (often within formal organizations) to achieve given outcomes in agriculture, e.g., improved agricultural technology development and diffusion. A network perspective can illuminate that interface, especially when analysts recognize that the history (and evolution) of any economic activity is intertwined with that of the industrial structures associated with it (Dosi 2000).

Conclusions

Following Flyvbjerg (2001), I grant a privileged position to the *how* question. My point is not that the *how* question should replace or supercede other kinds of questions. Clearly, research endeavors should unite *what*, *why*, and *how* questions, and their answers.

My point is that the *how* question has been largely neglected, considered less prestigious and less important than the others, and left to consultants and practitioners concerned with supposedly second-order implementation issues. My point is that these implementation issues are first-order. My point is that as governance issues move more sharply into view, these implementation issues become increasingly first-order, and this division of labor becomes increasingly indefensible.

This is not to imply that analysts become politicians and imagine their perspectives, however reasonable, to be foils against raw power. That would be even less defensible. Rather, it is to imply that policy researchers must get closer to reality, do narrative work, acknowledge politics and power relations, and become more concerned with practical issues and less with theoretical ones. They should focus on implementation issues, define and study compelling cases of institutional innovation and the historical contexts within which those cases have evolved, and recognize the network perspective and the multidisciplinary that it implies and supports. They should be ready at some point to say to those who propose formula-based policy prescriptions for agriculture in Africa, “Look, these are my answers. These are my recommendations, based on my reading of what is feasible at this time. Test my answers and recommendations against those emerging from your own analysis. Argue with me if my answers do not fit with yours. But you must join the discussion by offering for debate interpretations you consider superior to mine.”

Summary and Conclusions

The central argument in this essay is that most policy research on African agriculture is irrelevant to agricultural and overall economic policy in Africa. Policy researchers are clearly frustrated by this situation. We agonize over it. We agonize individually: at our desks, in our classrooms. We agonize in the field, as we ask poor farmers and harried traders to answer our questions and are met with: “Why? What is the point? We answered these same questions last year, and the year before that, but nothing has changed.” We agonize collectively, at grandly titled conferences and workshops that, all too often, seem only to rehash worn-out ideas or launch new fads. Our hearts are in the right places. But our minds are, as yet, not ready to respond to our hearts’ intentions.

The people who are appointed to formulate agricultural policy and administer its programs in Africa—the Ministers and Permanent Secretaries of Agriculture, the Directors of extension services, the Directors of agricultural research institutes—are similarly frustrated and torn. So are elected members of Parliament serving on agriculture committees. And so, too, are leaders of traders’, farmers’, and workers’ organizations. For the technical and political bases of extension services, research institutes, parliamentary committees, and civil and professional organizations are such that they are incapable of developing and administering economic policies that go to the heart of Africa’s agricultural problems. Units within Executive branches and Ministries of Finance are much more capable of doing so. But despite rhetoric to the contrary, these units are seldom willing, or able, to comprehend the difficulties facing agricultural sectors.

I have argued that the policy research community—and the agricultural economics profession in particular—must shoulder a significant part of the blame for this state of affairs. Clearly, policy formulation and implementation are no different in agriculture than in any other sector of an economy. They are driven to no small degree by the politics of raw power. But I maintain that agricultural economists have failed to put agricultural problems on the policy agenda in more than abstract fashions. We have failed to come adequately to grips with the real problems facing agricultural policymakers, namely how to assess the operational feasibility of alternative policy options, and how to promote the feasibility of the most highly valued alternatives. Rather, most of our research has a distinct ivory-tower flavor to it. We discuss, define, and redefine *ad nauseam* such concepts as rural livelihoods, value chains, meso-lands, nonseparability, linkages, transaction costs, governance, and more. Meanwhile, even the weakest of governments in Africa is directing and influencing lives, very often for the worse, and very often because it has failed to identify and respond to a range of discernible ex post implementation hazards.

I have suggested that one might even judge from our output that we hold beliefs such as the following:

- that there are no regional disparities in agricultural incomes within African countries and that if there are, these are based solely on differences in climate and soil;
- that markets for agricultural inputs and outputs are fully competitive and that they serve the interests of all groups equally;
- that market reforms have distinct beginnings and endings, and that the World Bank and IMF decide on those dates;
- that public extension systems are as easy to rebuild as they are to dismantle;
- that African farmers and herders are first and foremost natural resource managers and not, like farmers and herders everywhere else in the world, in it for the money;

- that African traders are benevolent creatures and not, like traders everywhere else in the world, in it for the money;
- that urban squalor and rural stagnation are unrelated, and unimportant anyway;
- that outputs of our policy research should be aimed at our fellow researchers and not at policymakers and the general public;
- or worse.

Clearly, we do not believe all these things. But equally clearly, research to provide information that improves agricultural policies in Africa is beset with difficulties. A major conclusion to be drawn from this essay is that the biggest difficulty is not, as some of us argue, that we do not have enough funds to undertake research. Rather, it is that we are neither posing nor tackling real policy questions in ways that resonate sufficiently with policymakers to make them want to invest funds with high opportunity costs in our research programs.

I have argued that we are much too ready to capitulate to development fads originating in the minds of intelligent but ill-informed people sitting behind desks in offices far-removed from any farm or marketplace in Africa. While unable to propose a unified agenda for policy research on African agriculture, I have suggested that re-orienting our work away from these fads and toward the wide range of questions posed by the imperfect competition inherent in agricultural markets (and its fundamentally political character) will almost surely render our work more relevant.

I have argued for a different approach to agricultural policy research: an approach built more on *how* questions and less on *what* and *why* questions. And I have tried to demonstrate the implications for research design and conduct of asking policy *how* questions and attempting to answer them. I have suggested that piloting action research in case studies of initiatives involving promising institutional innovations can offer significant scope for identifying convincing *how* answers.

Finally, I have argued implicitly that while our frustrations and agonies are real and justified, a way to resolve these frustrations and agonies is well within our reach. But individually and collectively, we must recognize gaps in our abilities, re-tool accordingly, and return to our work with the same convictions but with different, more relevant partners, proficiencies, and lines of attack.

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Why does progress in African agriculture lag behind the rest of the world? Many authors have sought to answer this question and a multitude of different opinions are held. This book challenges many of the accepted “policy truths” that are currently prescribed as ways to alleviate food insecurity and boost agricultural production in Africa.

The central argument is that most policy research on African agriculture is irrelevant to agricultural and overall economic policy in Africa, and that the policy research community and the agricultural economics profession in particular must shoulder a significant part of the blame for this. Agricultural economists have failed to come adequately to grips with the real problems facing agricultural policymakers, namely, how to assess the operational feasibility of alternative policy options, and how to promote the feasibility of the most highly valued alternatives. A different approach to agricultural policy research is needed that is built more on *how* questions and less on *what* questions and *why* questions.

“This is an important message that should be read in the highest circles at the national level in Africa, in multilateral and bilateral development assistance institutions, and among academics. Not only is the style of Were Omamo's message unusual, its content will make you think again. Developed during his tenure at ISNAR and based on experience gained in livestock and food policy research, the report embodies new insight across disciplinary boundaries within the Consultative Group on International Agricultural Research and beyond.” *Dr. Stein W. Bie, Director General, ISNAR*

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