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## How Research Can Assist Policy: The Case of Economic Reforms in Uganda

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*Research has had a powerful impact on policy in Uganda, affecting the climate of opinion, improving the quality of the policy debate, and helping focus public policy and intervention on poverty reduction. Uganda's successful use of knowledge and research to help set public policy priorities demonstrates that even a poor postconflict country can, in a relatively short period of time, create an effective information base and feedback mechanisms for decisionmaking.*

Ugandan policymakers developed a reputation for being among the most committed economic reformers in Africa in the 1990s when they established macroeconomic stability, stimulated rapid economic growth, and granted considerable personal and political freedom following a long period of economic decline, conflict, and repressive government. Circumstances in Uganda were favorable for innovation in that the country has relatively abundant land resources and some reforms could generate returns very quickly. At the same time, the legacy of conflict and the AIDS epidemic present difficult long-term challenges.

During the 1990s Uganda introduced innovations in several policy areas. The Poverty Reduction Strategy Papers of the late 1990s, for example, owe their international popularity to the Poverty Eradication Action Plan (PEAP) developed earlier in Uganda (and to similar efforts in Bolivia and Mozambique).

The reform process in Uganda made use of various types of research, broadly defined as data, knowledge, statistical and other analyses, and dissemination. Some research outputs have been more important than others in influencing policy. The results of public expenditure tracking studies have had dramatic effects on policy, and other types of research have helped improve the climate of ideas influencing policymakers. Other research has had little influence, either because the need for reform was already recognized, the policy implications were intellectually or politically controversial, or the findings were inadequately disseminated.

Most of the research we examine here was officially sponsored and often donor-financed, including research conducted at the independent Economic Policy Research Centre in Kampala. Other domestic research activities were conducted outside governmental structures, including the work performed by the Centre for Basic Research, an independent, privately financed research institution working within a partially Marxian intellectual tradition. The government subcontracted the participatory poverty assessment to nongovernmental organizations (NGOs), which were (crucially) allowed to operate within the Ministry of Finance, Planning, and Economic Development, keeping them close to ongoing policy discussions in government.

In 1986 the National Resistance Movement government inherited a society in which improvements in institutions and service delivery would inevitably take a long time. Good opportunities existed, however, to reduce poverty in the short run by ending predatory taxation of exports, stabilizing the currency, and achieving peace after a long period of conflict (Collier and Reinikka 2001). Other reforms, however, such as land reform, raised potentially divisive political issues that needed to be addressed cautiously.

In this article we discuss the role of research in macroeconomic and structural reforms. After examining how analytic work guided policy on poverty and the distributional impact of growth in Uganda, we explore how data were used to shape sector policy, especially policy affecting public services, assets, and governance. We also show how the research–policy link was institutionalized in the PEAP.

## Macroeconomic Reforms and the Reestablishment of National Accounting

Before the 1985–86 civil war, Uganda's economy had been in decline for 15 years, and much of its economic activity was in the black market; during the civil war the economy experienced hyperinflation. The most urgent macroeconomic problems facing the country in the mid-1980s were thus the need to control inflation and generate rapid economic growth.

Although a commitment to macroeconomic stability had been part of the adjustment programs with the International Monetary Fund (IMF) and the World Bank since 1987, lax budget implementation repeatedly resulted in larger than planned fiscal deficits. Borrowing from the central bank financed fiscal deficits, which led to an average annual inflation rate of nearly 200 percent and an acute fiscal crisis in 1992. Initially, little consensus was reached on the importance of price stability or how to achieve it

### *Informing the Debate on Devaluation*

In the 1980s the prevailing wisdom in Uganda was that depreciation of the official exchange rate led to inflation, which in turn led to depreciation of the parallel mar-

ket rate, thus reestablishing the previously existing premium between the parallel and official rates (Henstridge and Kasekende 2001). This reasoning was also reflected in the academic literature, which recommended a constant crawl exchange rate regime (Kharas and Pinto 1989; Pinto 1988, 1989).

The Ugandan Ministry of Planning and Economic Development reached the opposite conclusion, determining that devaluation of the official rate would help the government implement a budget consistent with low inflation (because thanks to donor aid it was a net seller of foreign exchange) and therefore not lead to an offsetting depreciation of the parallel exchange rate. The Presidential Economic Council provided an important forum for economic policy debate, and the ministry's macroeconomic strategy document "The Way Forward I" eventually convinced decisionmakers to legalize the parallel market and devalue the official exchange rate (Republic of Uganda 1992b). This was an unexpectedly bold reform—critically informed by international and domestic analytic work—that went well beyond the conditionality agreement with the IMF.

The fact that devaluation has different impacts on different income groups fueled a Marxian critique on the grounds that devaluation would benefit groups that are neither poor nor productive (Mamdani 1989). This argument contributed to a lively public debate with senior civil servants.

Analysis of household survey data helped resolve many of the questions about liberalization as a poverty-reducing strategy. It showed that export crop farmers were as poor as the average Ugandan in 1992 and that they benefited from the early years of reform as much as any other group (although there is certainly some local monopoly in trade). The household data also revealed that following reform, smallholders increased their investment in housing improvements and agriculture. Research also helped convince policymakers to abandon the stabilization tax on coffee introduced following the 1994 boom in coffee prices, a tax that threatened the supply response of exports. The study by Bevan and others (1990), which showed that small farmers in Kenya were better able than politicians to save windfall income, caused a heated policy debate about its applicability to Uganda's circumstances and had an important effect on the decision to repeal the coffee tax two years later. The point at issue was not the findings of the research in Kenya but their applicability in a country with a less-developed financial system.

### *Creating a Consumer Price Index to Guide Short-Term Macroeconomic Management*

The 1992 fiscal crisis helped solidify macroeconomic priorities. The new economic team put in place during the fiscal crisis had an explicit mandate from the president to match spending to resources. In a statement following the 1992 budget speech, President Museveni said, "There will be no inflation. Inflation is indiscipline" (quoted

in Henstridge and Kasekende 2001: 58). There was an increased willingness to make intrayear adjustments in implementing the budget to maintain macroeconomic stability. The monthly cash flow was used to track the fiscal stance and to make short-run fiscal adjustment in the face of shocks.

The main problem was no longer a lack of understanding about what causes inflation but the dearth of statistical information to guide short-term macroeconomic management. Priority was therefore given to creating a consumer price index, which required a household budget survey. The weights for consumption had to be significantly revised with the share of food expenditures increasing because of the impoverishment of the population in the period since the previous survey, conducted in the mid-1960s.

The new consumer price index was used as the direct target in managing the monthly cash flow for two reasons. First, prices were flexible and responded quickly to changes in the money supply. Second, there was a three-month lag in the compilation of monetary statistics, whereas the consumer price index was available at the end of each month. For these reasons changes in monetary conditions showed up in prices at about the same time they appeared in the statistics for broad money (Henstridge and Kasekende 2001). There was therefore no advantage to looking first at the intermediate monetary indicators. Looking directly at price data also sidestepped the difficulty of separating signal from noise in the monetary data, especially given the unpredictable short-run changes in money demand characteristics of a remonetizing economy like Uganda.

### *Reviving the National Accounts to Monitor Economic Growth*

Reviving the national accounts to monitor economic growth performance was another early priority. Doing so involved conducting an enterprise census, improving trade statistics, and coming up with unconventional ways to estimate agricultural production in the absence of basic surveys. Meanwhile, the research department of the central bank focused on improving the balance of payments data to monitor private transfers. These transfers grew as members of the Asian community expelled by Idi Amin in 1972 returned to repossess their confiscated properties, bringing with them funds to renovate real estate and restart their businesses.

## **Economic Liberalization, Tax Reform, and the Response of Firms**

Macroeconomic stabilization was accompanied by economic liberalization and structural reforms, including new trade, exchange rate, and tax policies.

### *Trade Liberalization*

After an experiment with barter trade, Uganda abolished the coffee export tax and removed commodity board monopolies on coffee and cotton in the early 1990s (Akiyama 2000).<sup>1</sup> The speed with which this reform was adopted reflected the fact that many Ugandans suffered from restrictions on marketing their crops. Not only had prices been suppressed, farmers had often been paid in promissory notes rendered almost worthless by inflation. Smuggling (of Ugandan coffee through Kenya, for example) was widespread. Many Ugandan politicians farm and rear livestock, and the president publicly expressed sympathy for cross-border food traders. Although research (discussed later) did illustrate the distributional impact of trade restrictions, the decision to liberalize predated the research.

One major caveat is the extent to which men control cash crop incomes. Early in the reform process an NGO conducted a survey of women's needs. That study emphasized the extent to which men dominate the sale of cash crops (UNICEF/AFCODE 1988). Women in Arua were not enthusiastic about tobacco production, even though it is an important income source, because men controlled the income (Harmsworth 1991). More recent participatory work has suggested that malnutrition in the relatively affluent district of Bushenyi is caused by the commercialization of food crops (Republic of Uganda 1999b).

Although this research did not persuade the government to abandon its advocacy of cash crops, it brought attention to the need to consider corrective actions to ensure that women benefit from the opportunities created. One such action was gender training for agricultural extension officers. Land reform has also included some efforts to strengthen women's land rights (curtailing the right of men to sell land without the permission of the rest of the family). Universal primary education, introduced in 1997, is reducing the educational gender gap. The policy of export liberalization has therefore been accompanied by some corrective measures that should improve women's relative position. Notwithstanding these efforts, the interaction between gender and export promotion merits further investigation.

Liberalizing imports occurred more slowly than liberalizing exports. It also involved more debate and analysis. The main contribution of research was the theoretical understanding of the impact of import taxes in an economy like Uganda. Initially, the government failed to recognize the equivalence between export and import taxes or the fact that in a small, open economy, import taxes are ultimately borne by export producers. For this reason the switch from export taxation to import taxation during the early 1990s achieved less than expected in terms of export orientation and diversification (Collier and Reinikka 2001; World Bank 1996b). Once the equivalence between export and import taxes became well understood, nontariff barriers were gradually removed. During the late 1990s the government

implemented a major tariff reduction program, giving Uganda one of the lowest tariff structures in Africa.

Some country-specific research was important in establishing the needed direction of change. Research determined the impact of explicit and implicit tariff changes on enterprises and the effective protection provided them by the tariff system (Short 1995, 2000). These studies were used to advocate trade reforms and assess their impact. As noted, data from the first household survey demonstrated that coffee farmers, who benefited from the improved domestic terms of trade, were no better off in 1992 than the average Ugandan household. That finding suggested that trade liberalization would not necessarily be distributionally regressive.

### *Tax Policy*

As macroeconomic distortions were gradually removed, it became increasingly clear that the tax exemptions under the 1991 investment code undermined the tax base and adversely affected competition. Subsequent tax reforms removed many of the code's exemptions and introduced a value-added tax and a new income tax law.

With the exception of work on tariffs, little research has been conducted on tax policy. Recently a few studies have examined the impact of the government's tax reforms on firms and their regional competitiveness and on the distributional impact on households, particularly poor households (Chen and others 2001). This work did not lead to any major policy changes, but it provided an ex post validation of the impact of the tax reforms. It also confirmed the view that increases in tax rates would not be conducive to growth and that future increases in revenue will have to come from expanding the tax base.

Too little attention has been paid to the most widely disliked tax in Uganda, the graduated personal tax. This tax, which has inspired a wave of popular protest songs, generates a large proportion of local revenue in Uganda. Although reform of the tax has been on the policy agenda for some time, little reform has actually taken place. The reform of local taxation deserves a higher profile in the design of future economic reform, and not just in Uganda. Participatory work on taxation has focused on local taxes because poor households are very directly aware of them (Muhumuza and Ehrart 2000). In contrast, survey-based work has tended to focus on central government. There is scope for these perspectives to learn from each other. Quantitative work needs to devote more attention to local taxation, which often includes some of the most distortionary and inequitable taxation in the whole system. Interpretation of participatory work needs to recognize the fact that taxes can have significant indirect impacts on the poor even when the poor are unaware of them. The indirect impact of import duties on cash crop producers is a good example.

### *Firms' Response to Reforms*

In the early 1990s the Ugandan private sector and the World Bank began monitoring investor perceptions using surveys (World Bank 1994a, 1994b). In 1998 they jointly carried out the first quantitative enterprise survey to examine firms' investment and export response and the impact of inadequate infrastructure services and corruption on investment and growth. The survey revealed that despite major improvements in the policy environment, investment rates of Ugandan firms did not differ greatly from those of firms in other African countries, averaging slightly more than 10 percent a year with a median value of 1 percent. Profit rates, however, were lower in Uganda than elsewhere in Africa. These results suggest that Ugandan firms display more confidence in the economy than their counterparts in many other African countries and, for a given profit rate, invest more. At the same time, increased competition, thanks to economic liberalization, has put pressure on firms to cut costs. Many of these costs, however—such as the cost of infrastructure services—are set by the public sector and are not under firms' control. Thus firms have been unable to meet the challenge of increased competition by reducing costs, which has had adverse consequences on profits (Reinikka and Svensson 2001a).

The firm survey also reveals that the unreliable and inadequate supply of electricity was the leading constraint to all types of Ugandan firms, adversely affecting their investment rates. The supply of electric power appeared to have become less reliable in 1995–97, as demand increased. Given the poor quality of infrastructure services, investment in productive capacity often requires an additional investment in electric power generators. In 1997 Ugandan firms allocated a quarter of their total investment to generators (Reinikka and Svensson 2001a, forthcoming).

Publicizing the extent to which poor electricity services handicapped investment directly contributed to removing political obstacles to private participation in the power sector, helping break the parliamentary logjam on this issue. These findings also had a major impact on the subsequent formulation of the government's private sector and competitiveness strategy.

Coalition building between government and the private sector was generally difficult during the trade liberalization phase. Because most firms in Uganda produce for the domestic market, they naturally resisted the lowering of tariffs. Building coalitions with the private sector became somewhat easier when broader questions of constraints to growth and investment— particularly public-sector performance— were addressed (in the context of the 1998 firm survey, for instance).

### *Unfinished Business: Financial and Legal Reform*

Private investment in Uganda, as in other African reformers, has proven too flighty a bird (to use Keynes's phrase) to be successfully captured. Measured investment rates

remain lower than the high rates of economic growth would suggest and cast some doubt on the sustainability of growth. Two major areas requiring attention are the financial and legal systems.

Reform of the financial and legal sectors confronts significant vested interests. In the financial sector there is the need to reclaim debts from large borrowers, some of whom are politically influential. Political pressure is often exerted to lower interest rates—rates that, although high, reflect the riskiness of lending in Uganda, as revealed in the high rate of bank failure and the large share of bad loans.

In the legal system, strengthened contract enforcement is needed, including the ability to foreclose. Surveys of entrepreneurs reveal that long delays and corruption in the legal system pose serious obstacles to investment (Republic of Uganda 1999a). Although these results are not surprising, the research is valuable because it underscores the need to ensure that the legal system treats investors, including foreign investors, equally. Only if the link with investment is clearly and vividly understood will policymakers take the steps needed to reform the legal system.

## Poverty and the Distributional Impact of Growth

Little dialogue took place between the government and NGOs in the early 1990s. NGOs remained more skeptical than the government about the poverty-reducing benefits of prudent macroeconomic policy and saw more need to change direction. The data on poverty and inequality trends needed to resolve the differences between the two groups were completely lacking.

### *Household Surveys*

Although time-series data on poverty trends were lacking, the 1992 integrated household survey provided the necessary data for obtaining a cross-sectional poverty profile, prepared in collaboration with the World Bank and the Ugandan Statistics Department (Appleton and Mackinnon 1995; Republic of Uganda 1992a; World Bank 1996b). The profile provided a useful snapshot, but it could not determine whether the country's economic policy had succeeded in reducing poverty. The 1989 household budget survey, conducted to obtain a new base for the consumer price index, used a different sampling method from the 1992 household survey, making comparison of consumption poverty between the two surveys impossible—something that became obvious only after several frustrating efforts (Appleton 1996, 2001a).

For a long time survey data collected after 1992 under the donor-supported Social Dimension for Adjustment project were unavailable for analysis because of the lack of statistical capacity to clean and archive the data for users. To meet the grow-



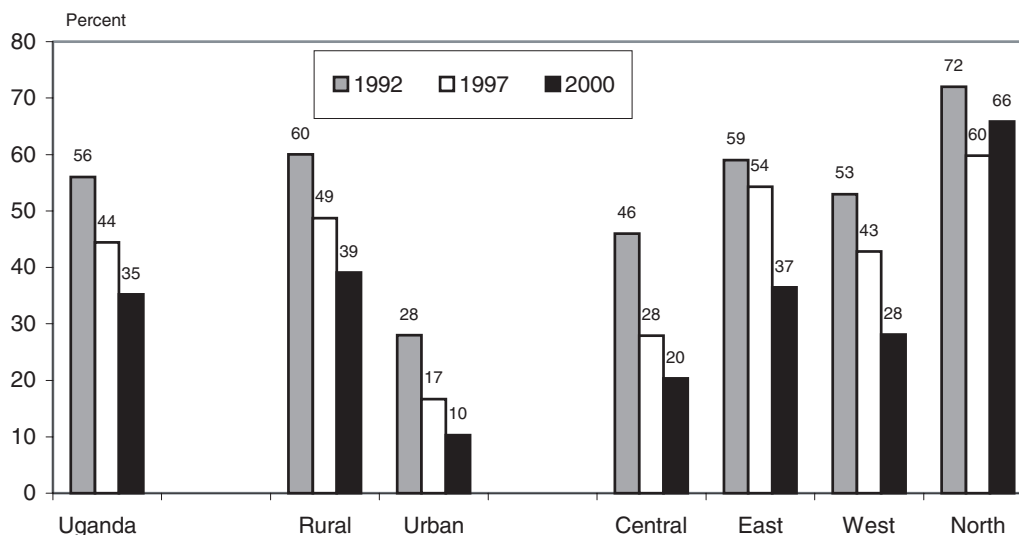
ing demand for data from household surveys, Ugandan statisticians, supported by external technical assistance, had to acquire these skills.

By 1999 five consecutive household surveys had become available covering the years 1992/93–1997/98. Each survey consists of a large sample of households (10,000 in 1992, 5,000 in other years) and communities (1,000 in 1992, 500 in other years) (Republic of Uganda 1994, 1996). These surveys offer relatively high-quality data for analyzing changes in poverty and inequality in response to economic reforms. A second baseline survey was carried out in 1999/2000.

The household survey data allow trends in poverty to be identified. Analysis of these data reveals that mean incomes did indeed rise significantly during the period, with a slight overall decline in inequality as measured by the Gini coefficient (Appleton 2001a, 2001b). This improvement reflects both the sharp increase in coffee prices in 1994, which was passed on to producers under the newly liberalized regime, and some change in economic structure, as the share of households in cash cropping increased. Decomposition analysis shows that almost half of the reduction in poverty came from improvement in the conditions of export crop farmers.

Using an absolute poverty line based on calorie needs (given the typical diet of the Ugandan poor and minimum nonfood requirements), the survey reveals that 56 percent of Ugandans were poor in 1992/93 and 44 percent were poor in 1997/98 (Appleton 2001a; Republic of Uganda 1997b) (figure 1). The 1999/2000 data indicate a further reduction in poverty to 35 percent in 1999 (Appleton 2001b; Okidi

**Figure 1.** Incidence of Consumption Poverty in Uganda, 1992–2000



Source: Appleton (2001b).

1999), and a decline in poverty was observed regardless of the poverty line used. These headcount indices illustrate the low base from which Uganda's recovery started and the persistence of mass poverty. But they also show a remarkable decline in poverty—by almost 40 percent—in only eight years, a decline explained largely by income growth rather than changes in income distribution.

Poverty declined in every region between 1992/93 and 1997/98; nationally, it also declined between every survey. The reduction in poverty was not uniform across all economic sectors or regions, however, nor was it the same each year. Households engaged in cash-crop farming, manufacturing, and trade fared particularly well. The incidence of poverty fell most in the central region and least in the northern region, where poverty has actually increased since 1997/98 (even though the most insecure regions in the north were excluded from the analysis).

An important lesson is the need for persistence in collecting household survey data. The robustness of poverty reduction did not become clear until 1997, a decade after reform began. The improvements enjoyed by non-cash-crop farmers were unclear even then, giving rise to the concern that the benefits might merely be a one-time effect of increased producer prices for coffee. The 1999/2000 data, which show that food crop farmers are doing very well, help put this concern to rest. On the down side, those data indicate an increase in inequality, which was not evident earlier.

The difficulty of comparing the earlier surveys provided ammunition to skeptics who questioned the usefulness of these data. Such skepticism is no longer a tenable position to hold in Uganda. Household surveys are likely to be useful for many purposes, and deficiencies in one dimension should not be used to dismiss the surveys entirely. The decision to continue conducting the surveys was an important one that has reaped considerable returns in terms of understanding poverty and ensuring support of economic policy (data that are inconclusive for time-series comparisons can be very informative for cross-section purposes).

### *Participatory Poverty Assessment*

Another shortcoming in poverty data has been the lack of systematic qualitative information on poverty. Several small participatory studies have been conducted, but they have not affected the policy debate.

Only after the first PEAP was completed and the government had gained some capacity in and exposure to participatory methods was it able to address this constraint. It did so by carrying out a national participatory poverty assessment, in collaboration with donors and NGOs. The project is a three-phase process in which the perspectives of the poor are being brought into national and district policy formulation, planning, and implementation. The pilot phase in 1999 consulted people in 36 rural

and urban sites in 9 districts. The design and implementation of subsequent phases is currently under way.

During this exercise, local people described poverty as a lack of the means to satisfy basic material and social needs as well as a feeling of powerlessness (Republic of Uganda 2000c). Poverty was viewed as nonuniform, complex, multidimensional, cyclical, and seasonal and was described by more than 100 indicators. These findings considerably extend the concepts of poverty beyond private consumption without conflicting with the evidence from the quantitative household survey.

In terms of poverty trends, however, the data collected by participatory methods were clearly at odds with the quantitative household survey evidence. As the participatory assessment concludes, “Through analysis of long-term trends in poverty, many local people felt that poverty was worsening in their communities. . . . Local people reported more movement into poverty than out of it” (Republic of Uganda 1999b:10). The conflicting poverty trends observed by the two approaches led to a heated but valuable debate of the relative merits of the two approaches.

McGee (2000) offers several hypotheses about why the two approaches lead to different conclusions. First, the two surveys used a different reference period. Second, the participatory survey was not based on a representative sample. Third, increased incomes from cash crops may have come at the expense of reduced area cultivated for food, increasing local food prices, or directly reducing the availability of home-produced food. This phenomenon links closely with gender issues, because men generally control the income from cash crops. Fourth, the national statistical surveys do not adequately capture insecure areas. Where insecurity prevents the collection of data, the area affected is omitted from the sample for the relevant year and for any year to which it is compared. If increases in insecurity are correlated over time with increases in poverty, this procedure will tend to bias the comparison, because the areas omitted will be those in which conditions may have worsened rather than improved.<sup>2</sup>

We suggest that the strength of the participatory approach is not in monitoring short-run movements in poverty but in revealing fine-grained aspects of welfare— aspects that quantitative studies do not identify (although once identified they can often be studied quantitatively). For instance, the participatory surveys in Uganda shed light on the relative strengths and weaknesses of different legal institutions and different levels of law enforcement. They also identify the factors that deter people from using medical services (among which the unpredictability of costs was as important as the level of costs). The participatory poverty assessment suggested that the demand for public water and sanitation services was much higher than was previously assumed. As a result, government allocated a large part of the debt relief under the highly indebted poor countries (HIPC) initiative to this sector in the budget—another example of the Ugandan government’s responsiveness to research findings.

## Using Data to Shape Sector Policy

Research has been used to inform policy debate on sector policy and poverty in Uganda in five areas: prioritizing propoor spending, improving service delivery, increasing access to assets, increasing security, and improving governance.

### *Prioritizing Propoor Spending*

The ideal method of prioritizing different types of public spending would be to compare rates of return or net present value corrected for income distributional effects, the extent of substitution between public and private sectors, a valuation of nonmonetary benefits, and an estimate of external effects (see Drèze and Stern 1990 for a formal presentation of cost-benefit analysis that integrates these concepts). In practice most estimates omit these corrections (partly because they are often difficult to make). As a result, estimated rates of return can be poor guides for policy. Tertiary education, for example, does very little to reduce poverty directly because it overwhelmingly benefits the nonpoor. Indirectly, tertiary education may have very significant benefits for poverty reduction if graduates help improve public services or generate employment, remit their incomes to poor households, or contribute to the communities from which they come. Estimates of these externalities are not available, however. Private returns to tertiary education can be measured, but they do not tell poverty analysts what they need to know. Moreover, the benefits produced by public services (lives saved by immunization and births prevented by contraception, for instance) are extremely diverse and hard to compare.

With these caveats in mind, research can provide valuable information on the private returns to public services, the roles of public and private sectors, the incidence of public expenditure, and the costs of providing the service.

In Uganda research has yielded several important findings on returns to different services. It has shown that the returns to primary education are positive (albeit not spectacularly high), with productivity and incomes rising 4–5 percent per year of education (Appleton 2001c; Appleton and Balihuta 1996; Appleton and Mackinnon 1995; Deininger 2001). Primary education appears to have similar proportional productive benefits in various income-generating activities (farming, nonfarming, and wage employment), and it creates externalities that are larger than the direct benefits (Appleton and Balihuta 1996). Education also has a major impact on health, with parents' knowledge about the causes of diarrhea and malaria having a significant independent impact on their children's survival (Mackinnon 1995). Research has also shown that agricultural extension has a positive impact on agricultural productivity, largely through increased use of fertilizer (Deininger and Okidi 2001).

The household survey data provide vital insights on the roles of the public and private sectors. They indicate, for example, that private education plays an important role, particularly at the secondary level. Private health care caters to a larger number of patients than do public providers. Use of private health services is strongly associated with income, suggesting that it is perceived as a superior service. Full understanding of the impact of public expenditure on welfare requires study of both the substitution between public and private sectors and the incidence of expenditures.

Where the justification for public expenditure is partly distributional, it is also important to examine the incidence of the benefits, which requires household survey data. The purpose of this kind of analysis needs to be made very clear, because it is easily confused with studies of the determinants of demand.

The World Bank (1996a) studied the incidence of benefits in the Ugandan health and education sectors, using data from the 1992 household survey and the government's fiscal accounts. It found that more than 20 percent of children in primary school were from the poorest quintile of households. Some interpreted this finding as indicating that spending on primary education was propoor and should therefore be supported. Others, who also favored subsidizing primary education, were skeptical of the finding on the grounds that it would imply that cost was not a problem for poorer households and that it would therefore tend to undermine the case for subsidy.

More recent work on the incidence of public expenditure has revealed some fine-grained results. Even where the broad patterns are unsurprising, the details can be unexpected. For instance, although the overall incidence of expenditure on secondary education 1997 was highly regressive (as expected), this did not apply to rural secondary schools, where a significant proportion of children came from poorer backgrounds. This finding is both surprising and potentially important for policy.

Until recently, information about the costs of delivering a package of basic services to the population was scanty and scattered. Although the medium-term expenditure framework provides costs for outputs, these costs are based on prevailing resource constraints and do not represent the costs of actually delivering a service to the intended target population. Recent pioneering work by the Ministry of Finance provides a global costing for the various aspirations in the sectoral plans that feed into the PEAP (Republic of Uganda 2000a). By revealing the substantial difference between aspirations and available resources, this work has stimulated thinking about how to bridge the gap.

There has been much confusion about the role of costing in developing a poverty strategy. The need for both resource-constrained and unconstrained estimates, followed by a substantial policy debate about how to reconcile them, has not been widely appreciated.

One danger in costing is that sectors may have an incentive to resist cost-saving mechanisms if they think adopting them will reduce their allocation or if they are

accustomed to thinking about first-best methods of delivery independent of cost. For instance, the acute shortage of teachers and classrooms could be addressed partly by using low-cost temporary structures or by double-shift teaching. These suggestions might have been considered more carefully if the sector had believed it faced a hard budget constraint. Costing thus represents a move in a bargaining game within the government and between government and its partners.

These analyses provide the basis for two kinds of allocative decisions in Uganda. The first and most fundamental is the need to reallocate expenditures toward areas that directly reduce poverty. The thinking behind the decision to focus on directly poverty-reducing programs was based on econometric evidence of benefits and of the often abysmal quality of services received by the poor, as well as on the political economy argument that the weak voice of the poor will lead to neglect of the services directly benefiting them unless corrective action is taken.

A second question concerns funding allocations within basic services: what should the allocations be and who should make them? The presidential election of 1996 led to a massive expansion of supply and expenditure in primary education, with enrollment skyrocketing virtually overnight. Though the increase in spending on education has been enormously popular, there is a serious question (not only in Uganda) about whether the sequence of reform has favored social sectors too much at the expense of basic productive services (such as agricultural extension), which are often far cheaper to provide and have a greater impact on incomes in the short run.

If the budget is optimal, all expenditure has equal marginal value. The approach to budgeting, however, has been to recognize that the budget did not start from an optimal state and that certain types of spending, including spending on basic services for the poor, have been neglected. These expenditures have been designated as priority areas, and the central commitment of government has been to ensure that they receive an increasing proportion of resources over time.

Measurement of these reallocations is complicated by the importance of donor-funded projects, which are often difficult to classify sectorally and of uneven effectiveness. To deal with this problem, Uganda adopted an innovative approach. First, it defined a set of public services that were believed to benefit the poor directly. The budget lines on these items were included in the Poverty Action Fund. Second, the share of the Poverty Action Fund in public expenditure, including spending financed by budget support and debt relief but excluding donor projects, was targeted. This proportion has risen dramatically, from 17 percent of total spending in 1997/98 to 24 percent in 1999/2000 and a projected 33 percent by 2002/03. Although some of this increase may come from converting project support into budget support, there is no doubt that the bulk of it represents a massive increase in the availability of resources for poverty-reducing services. Third, the set of services included in the Poverty Action Fund increases over time, but the share of the fund is recalculated backward to ensure that spurious increases are not created by redefinition.<sup>3</sup>

### *Improving Service Delivery*

Research has helped improve the quality of service delivery in Uganda in two ways. First, no one fully understood the flows of expenditures through the system in the mid-1990s. This situation is not unusual in public sector service delivery in developing countries. What was unusual was the frankness with which the problem was acknowledged. There were also some apparent discrepancies between administrative and household-based primary school enrollment data in the early 1990s, with administrative data suggesting 70 percent gross enrollment and household-based data suggesting 90 percent. Most (but not all) of this difference could be explained by differences in definition and coverage.

To obtain reliable data on financing of primary schools and health clinics across the country, the government conducted a public expenditure tracking survey. The principal motivation for the tracking survey in education was the observation that although budgetary allocations for primary education almost tripled between 1991 and 1995, there was hardly any corresponding increase in officially reported enrollment (Reinikka 2001). The hypothesis was that actual service delivery (output) was much worse than budgetary allocations would imply because public funds (inputs) did not reach the intended facilities—because of competing priorities at various levels of government, corruption, or misuse of public funds. To test this hypothesis, researchers compared budget allocations and actual spending in two decentralized sectors, primary education and health care. Because government accounts were not generally available, a survey of 250 government schools and 100 public health clinics was carried out to collect spending data for 1991–95.<sup>4</sup> Somewhat unexpectedly, local government (district) and health unit records were totally inadequate for effective surveying, whereas school records were relatively good.

The school survey confirmed the hypothesis that input flows suffered from serious problems of poor governance and lack of accountability. In 1995 only 22 percent of funding intended for nonsalary public spending actually reached schools, with district authorities retaining most of the nonsalary capitation (per student) grants meant for schools. Median school retention of the capitation grant was zero, with considerable variation across schools. Political economy and the bargaining power of schools mattered more than efficiency and equity considerations: larger schools and schools with wealthier parents received a larger share of the intended funds (per student), whereas schools with a higher share of unqualified teachers received less funding (Reinikka and Svensson 2001b).<sup>5</sup>

The survey also found that primary school enrollment rose 60 percent between 1991 and 1995. These figures are in stunning contrast to official figures, which reported stagnant enrollment rates over this period. The huge discrepancy suggests that official statistics cannot always be trusted. As a result, the government overhauled the method of collecting enrollment statistics.

The government's response to the survey findings, many of which were troubling, represented a triumph for the speedy effect of research on policy. Within weeks of the publication of the survey results, the cabinet decided to move ahead with a public information strategy (instead of administrative measures). The Ministry of Finance began publishing monthly transfers of public funds to districts in newspapers and broadcasting them on the radio. The Ministry of Education ordered that primary schools display information on transfers on public notice boards. The purpose of the campaign, which has been maintained since 1996, was to make information on transfers of funds more accessible to parents and to send a signal to local governments that the central government was now overseeing transfers. This information policy is currently being extended to other basic services, including health, agricultural extension, and water supply.

When the Ministry of Education replicated the school survey four years later, it found a dramatic improvement in the flow of funds (Republic of Uganda 2000b). In 1995, 70 percent of schools received no capitation grants, and on average, schools received only 22 percent of their total allocation. In 1999 more than 90 percent of schools received either a large part or all of their entitlement. For policy impact of research, this is exceptional.

The second major contribution of research is direct evidence on the quality or quantity of service provision. Three surveys were conducted within a short period on the performance of agricultural extension. All showed low rates of contact with farmers, with just 10–30 percent of farmers ever having seen an extension officer. A major reason for the poor performance was that many extension officers had no money for fuel to enable them to travel. The survey results also showed that farmers who did receive extension services valued the services. These findings contributed to a complete rethinking of agricultural service delivery, which is being restructured in a much more bottom-up fashion.

A major lesson of this experience is that negative findings about performance can be used to justify either more intense public effort or scrapping a service altogether. Only given a set of assumptions about what is feasible and desirable does a research finding have a policy implication.<sup>6</sup>

### *Increasing Access to Assets*

It is sometimes argued that Uganda exhibits a high degree of equality of asset ownership and that differentials between households are due mainly to other factors, such as human capital and labor. This impression has been reinforced by the claim that Uganda is land abundant in aggregate. Household survey data qualify this picture. The land–labor ratio is generally higher among better-off families, suggesting that wealth in land is more important in generating differentials than wealth in labor (Appleton and Mackinnon 1995).



A richer picture is provided by the household surveys, in conjunction with two extensive studies of land issues conducted by the independent Centre for Basic Research and the Land Reform Centre at Makerere University in association with the University of Wisconsin (see references in Mackinnon and Reinikka 2000). Although the perspectives of the two major studies differ widely, their results share much. Both studies found considerable inequality in access to land, both across and within localities. This inequality reflects differential access to political influence under governments throughout Uganda's history (colonial, postcolonial, and current) rather than the operations of the land market. A significant part of the country is under a form of tenure known as *mailo*. Under this system, the colonial government effectively conferred tradable title on tenants while giving the traditional aristocratic owners nominal ownership status and some fixed rents. The ambiguity created by this form of tenure needs to be resolved because it does not translate easily into modern legal categories; how this is done has potentially large distributional implications. In addition, many people borrow or rent land under conditions that do not give them fully flexible use of it, preventing them, for example, from investing in tree crops. Land rights for women are very inadequate (perhaps non-existent) in some areas.

This extremely complex set of problems requires a policy response that is considerably subtler than advocacy of wholesale land redistribution or the view the authors have sometimes heard expressed, even by the shrewdest policymakers, that land shortage poses no problem or that no effective mechanisms are available to government to improve land distribution. What is needed is a set of institutions that guarantees that the poor cannot be expropriated in the process of formalizing land rights, either by a nontransparent allocation of the land they are already on or by granting large areas of land that could instead be used for smallholder development in future. The 1998 Land Act provides much of the necessary legal framework, strengthening women's land rights by requiring their consent before land is sold and establishing a set of permanent low-level land tribunals. This system is proving too costly to operate, however, and policy is now moving toward systematic demarcation. A heated debate on co-ownership of property by married couples is ongoing.

In economies in which wealth is unequally distributed, the use of public funds to redistribute assets can be justified in a perfectly orthodox neoclassical framework. Uganda's current practice of restocking cattle and coffee seedlings and providing land for the landless poor (through a legal provision for the Land Fund) are consistent with such a framework. Given the severity of the fiscal constraint, however, such policies will succeed only if they are carefully targeted and selective. Although Uganda's land policy or its restocking of cattle and coffee trees is not driven primarily by research findings, evidence from the household survey on changes in assets between 1992 and 1999 will help policymakers better understand the problems.

### *Increasing Security and Improving Governance*

Security has become an increasingly important issue in the debate on poverty reduction in Uganda.<sup>7</sup> Smallholders can do very little to invest in their future if they face major insecurity.

Lack of security in Uganda arises from two main causes: rebel movements operating from bases in neighboring countries and cattle rustling by pastoralists from the arid areas of Karamoja. The government is trying to reduce cattle rustling by disarming the Karamojong. The Karamojong need weapons, however, to defend themselves from incursions from Kenya by violent cattle-rustling tribes. Moreover, weapons are tradable assets for some very poor households, who may therefore be reluctant to hand them over.

The economic backwardness of a large part of Uganda cannot be understood without confronting major cultural and sociological problems. Seriously addressing poverty in the north will necessarily require transforming Karamojong culture by improving economic opportunities and providing adequate security for the border with Kenya. Adopting policy measures to help the Karamojong may be hampered, however, by the anger felt toward them by many people in the north who have lost property and lives to cattle rustling.

Research on the socioeconomic and cultural problems of Karamoja is needed. Most of the research that has been conducted on this region is sociological and political. Although this work provides many useful insights, more study is needed. It is generally agreed that the current government has been much more enlightened in its attitudes toward Karamoja than its predecessors. Full solution of the problem will require a better understanding, however. Achieving development in this context will be partly a matter of learning by doing.

Partly as a result of research findings, the effort to systematically and quantitatively document the characteristics and impact of corruption has begun. The first revision of the PEAP in 2000 places increased emphasis on governance. National household survey data showing that the judiciary and the police had the worst reputations of all major public services in Uganda may have been instrumental in moving the government to sharpen its focus on governance (Republic of Uganda 1998).

Svensson (2001, forthcoming) uses quantitative data from the 1998 enterprise survey to show that firms typically have to pay bribes when dealing with public officials whose actions directly affect their business operations, including exporting, importing, and using public infrastructure services. The demanded bribes are not fixed sums for given services but depend on the firm's ability to pay. The adverse effect of bribery on firm growth is more than three times greater than that of corporate taxation (Fisman and Svensson 2000).

Both security and corruption require a stronger regional focus in research and policy formulation. The problems of cattle rustling in Uganda cannot be addressed

in isolation from Kenya. The problem of corruption and governance cannot credibly be addressed without examining the conduct of military officers in the Democratic Republic of the Congo. Following a recent U.N. report on international military involvement in Congo, Uganda established a public judicial inquiry, led by a respected expatriate judge.

## Institutionalizing the Research-Policy Link: The PEAP

Uganda was one of the first countries to formulate an economic strategy focused on eradicating poverty. In 1995 a taskforce was formed consisting of representatives of government, donors, and NGOs. An 18-month long participatory process culminated in the PEAP, Uganda's main policy document. That document was extensively revised in 2000. A summary of the revised PEAP served as Uganda's first Poverty Reduction Strategy Paper, which forms the basis for Uganda's relations with the donor community (Republic of Uganda 1997a, 2000a).

Formulation of the PEAP represented an effort by the executive branch of government to operationalize the commitment of Uganda's top political leadership to poverty reduction. Since adoption of the PEAP in 1997, it has reallocated significant public expenditure toward basic services.

Three features of the PEAP are noteworthy. First, research and data on Uganda were used extensively to refocus public policy and interventions on poverty reduction. Second, the government adopted a highly participatory approach, obtaining input from central and local governments, the donor community, NGOs, civil society, and academia. Third, the government quickly integrated the plan into its budget and medium-term expenditure framework.

The PEAP appears to have strongly influenced public thinking even outside the government. Its spirit was partially reflected in the proposals of several presidential candidates. The prominence of the plan suggests that there is sufficient consensus on many of the reforms that they will survive possible changes of government.

The PEAP is based on four goals: achieving macroeconomic stability, growth, and economic transformation; providing good governance and increasing security; directly improving the ability of the poor to increase their incomes; and directly improving the quality of life of the poor. Although many policies or actions contribute to more than one goal, this simple structure has been useful in communicating the essential thinking behind the PEAP. The PEAP is a document of the Ministry of Finance, Planning, and Economic Development. Uganda has thus mainstreamed poverty reduction into policy and public spending rather than create a separate structure for poverty reduction. Specific institutions nevertheless play an important part in the fight against poverty. The Poverty Action Fund, for example, was set up to provide a transparent way to ensure that HIPC receipts and other forms of budget support are

used to reduce poverty. NGOs are involved in monitoring the delivery of the fund's programs. Although the Poverty Action Fund programs form part of the budget, they receive higher budgetary priority, they are protected from within-year cuts, and their implementation at the local level is supported by conditional grants to local authorities.

The composition of Poverty Action Fund programs is not set in stone. Candidates for inclusion in the fund must satisfy certain criteria, however. Spending on hospitals and secondary schools is not currently included, for example, because the relevant agencies have not demonstrated that their programs are accessible to the poor or could be made accessible with extra funds.

Several institutions are mandated to monitor and analyze poverty. The Poverty-Monitoring and Analysis Unit, located in the Ministry of Finance, coordinates the national poverty monitoring strategy and publishes a regular poverty status report. That report has been frank about the need to extend the agenda (to improving security, for instance). The Bureau of Statistics collects and analyzes household survey data and other surveys relevant to poverty. The Economic Policy Research Centre, mandated to conduct research relevant to policy, has recently begun publishing an extensive working paper series. These and other institutions represent a significant mass of domestic capacity that is strengthening the quality of the debate on poverty reduction.

The thrust of budgetary reform is to prepare annual budgets through sectoral working groups. It is essential that these groups take poverty into account throughout their work. Economists in the planning units need to use the results of household surveys to analyze the incidence of their services and identify how they can be made more pro-poor. This is an ongoing process.

## Conclusion

Research has had a powerful impact on policy in Uganda in several areas, including public expenditure accountability and energy sector reform. The climate of opinion has also been affected by research.

The impact of research has been particularly remarkable given that during the 1970s and 1980s Uganda's university departments and statistical offices were destroyed and many educated Ugandans fled the country. Rebuilding the information base occurred more rapidly than might have been expected thanks to the responsiveness of key policymakers. Uganda's experience suggests that if an effective information base can be created there in less than a decade, it can most likely be created anywhere.

Seven aspects of using research to set priorities for economic reform in Uganda are worth noting. First, open public debate is an essential part of the reform process. Although Uganda's political system prevents candidates from representing political

parties, public debate, including debate in the press, is open and lively, and elections at all levels can be vigorously contested, despite limitations on political party activity. Technicians in Uganda have been willing to engage in public debate to support their case. Public officials in Uganda are sometimes freer to express their personal views publicly than are officials in some Western democracies. Many civil society and private-sector groups typically lack the capacity to use empirical analysis, however (Devarajan and others 2001).

Second, in some cases country-specific research (such as a good poverty profile) can have high social utility, although its payoff to the researchers in terms of academic prestige may be limited. In the case of governance and security, a regional perspective is often needed.

Third, policy implications emerge only within a framework of assumptions and expectations about the best way for social institutions to function. Without such a framework, opposing conclusions can be drawn from the same piece of research. The finding that a public service was inadequate, for example, caused some Ugandans to call for increased spending on the service and others to call for its termination. The finding that tenancy is more widespread in the land market than had been previously believed has no policy implication in the absence of an analytical framework in which the efficiency and equity implications of this finding can be assessed.

Fourth, benefiting from interdisciplinary dialogue with researchers from outside mainstream economics, such as those studying the political economics of land distribution within a Marxian tradition and noneconomists conducting participatory work on the nature of poverty, is difficult because of differences in terminology and mutual misunderstanding. Overcoming these obstacles is essential to making good use of all sources of information. This dialogue improved during formulation of the PEAP.

Fifth, research usually has the greatest impact on policy when it is embedded in a social process. Many very good research papers have no impact because they are conceived outside of and never become part of such a process. In contrast, work that is discussed with policymakers throughout its development can have an impact very quickly. Moreover, this embeddedness can increase the quality of research. Academics who are in close contact with the policy process may risk being swayed by political factors or friendship with policymakers, but they are likely to develop a better understanding of the policy framework and to see more clearly which hypotheses will be most interesting as inputs into the policy debate. In our judgment, the benefits of embeddedness often outweigh the risks (although there may always be a need for some researchers to offer a thoroughly independent view).

Sixth, technical econometric and statistical investigation requires capacity building. This is not simply or even primarily a matter of training; it is a matter of incentives and quality control that ensure that people are motivated to put their training to good use. The powerful but skill-intensive techniques of econometrics and poverty measurement share one problem: a relatively small error can easily reverse the results

of the research. Ultimately, quality control should be performed domestically. In the meantime, ongoing international cooperation between Ugandan and foreign researchers in developing the research agenda and exchanging results can play an important role. Researchers also need incentives to analyze existing data rather than collect new data, a practice that can lead to a large number of underanalyzed data sets.

Finally, external agencies have played an important part in sponsoring research, and pressure from these agencies has often been very constructive. The World Bank, for example, has been direct in confronting vested interests in the interest of economic efficiency. Outside pressure appears to have been less effective in dealing with distributional issues, such as the distributional impact of local taxation, taxation of luxury consumption, and land policy, perhaps because the design of such policies inevitably depends on controversial conceptions of political justice. The World Bank has also been less focused on physical security as a major determinant of welfare, another issue that raises controversial political issues. Some bilateral donors have played more important roles in this regard. The important role that the World Bank has played in the donor community in Uganda (and in other low-income countries) may introduce some bias toward technocratic rather than political solutions to problems and away from examination of distributional and security issues. Awareness of these biases should strengthen the quality of the bank's interaction with governments and other donors and suggest areas in which other donors and domestic political society may want to take the lead.

The close involvement of external agencies may swamp the government's own capacity to set the agenda. This fear, however, relates more to policy than to research. The Ugandan government has been judiciously selective in the research it has used. Some senior officials have been exceptionally careful in their comments on research or policy documents that cross their desks. But once persuaded, they have been decisive in taking action to change policy. It is remarkable how the sequencing of reforms as well as policy research in Uganda appears optimal, if not *ex ante* at least *ex post*.

## Notes

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1. The temporary stabilization tax represented a limited reversal of this policy.

2. The four districts excluded from the quantitative analysis because of security concerns included 6.9 percent of Uganda's population. The omission raises mean consumption by 1.8 percent in the 1992/93 household survey (Appleton 2001a).

3. Some observers have expressed concern that the Poverty Action Fund could undermine the budgetary process. This concern ignores three benefits of the fund. First, the monitoring of the fund's share of spending increases donor confidence that extra resources are really going into poverty reduc-

tion. Second, because the fund's share is targeted, sectoral ministries have an incentive to argue that their services are directly reducing poverty. This gives them an incentive to try to improve the incidence of benefits to the poor. The Poverty Action Fund thus creates an institutional incentive for sectors to address poverty reduction, something that should not be taken for granted. Third, civil society participation in the review meetings of the Poverty Action Fund has strengthened accountability and created wider public awareness of the purpose of public expenditure.

4. In 1997 there were about 10,000 primary schools in Uganda, about 15 percent of which were private.

5. Tracking teachers' salaries was complicated by the absence of disaggregated central government pay data. Relative to nonwage allocations, a larger share of salaries seems to reach schools, with considerable delays, however. The only systematic way of misappropriating salary funds was putting "ghosts" on the payroll. Previous actions by the government to clean up the teacher payroll suggest the magnitude of the leakage in salaries: almost 20 percent of all teachers on the payroll were removed as ghosts in 1993.

6. Participatory and sociological inquiries have shed light on subtler dimensions of quality, which would not easily be distinguished by econometric work. For instance, the quantitative evidence suggests that classrooms contribute much less than do textbooks to educational quality. What emerged from consultations, however, was that in very poor areas in which the schools had fallen down, textbooks might not survive long. To put this econometrically, the influence of classrooms may operate primarily through the impact on other explanatory variables and will therefore not be observed if these other variables are treated as exogenous.

7. According to the United Nations, 1.2 million Ugandans, or more than 5 percent of the population, are affected by emergency, including drought and conflict. Because the most insecure areas were omitted from the 1999/2000 household survey, the poverty impact is not fully known, but the effect on production and incomes must be enormous, given that more than 75 percent of people in some regions in the north have moved into camps.

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