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Methodological Approach

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Introduction

The goals of this study include examining a wide range of topics related to rural development, including the interaction of policies and institutions at the local level. With a broad range in subject matter, a narrow focus in geography was necessary. Although we considered at one time investigating four villages, two in each country, in the end we determined (correctly in retrospect) that if we were to gain the understanding we desired of the workings of each village, we did not have enough resources to sample four.

With our interest in long-run issues, we attempted to build on earlier survey data. We thus spent a considerable amount of time collecting and attempting to access data from earlier surveys. In the end, we made little use of these surveys, for reasons outlined below. On the other hand, our retrospective questioning of households proved quite successful, allowing us to examine some aspects of the dynamics of development without access to earlier survey data. We recommend this tactic to other researchers in the field.

This chapter first describes the village study approach to examining the impacts of policy. The next section details how this method worked out in practice during the survey of 1991/92.

The Village Study Approach

Our purpose, examining the impact of policy on rural people, requires observing the lives of those rural people and the workings of markets and institutions in their communities. By examining these lives, markets, and institutions over time, and noting changes in each of them, we hope to assess whether or not policy differences between the countries have been effectual. The problem is sorting out the impact of policy from the impact of a host of other factors that could lead to differences between the communities.

Some factors can be controlled in the choice of villages. As described in Chapter 3, the villages for this study were chosen to control primarily for agro-ecology; the two villages are quite similar in terms of what can be grown, and the biological potential of agriculture. In addition, cultural factors were partially controlled by the choice of ethnic groups. Other potential determinants of economic outcomes, such as history of the communities, the presence of NGO's, local disasters, the effectiveness of local political leadership, and many others could not be controlled.

One approach for dealing with these issues is to amass evidence that the study communities are not exceptionally unique. This we did ahead of time by examining earlier survey data for these communities and others in similar agro-ecological zones, as described below.

Given that these are not unusual communities and are at least somewhat representative of their agro-ecological zones, we than provide a detailed description of markets and economic and health outcomes for the villages. Finally, and most importantly, we examine cases in which policy differences are so great that we would expect similar villages facing the same agro-ecology to respond differently. If they are different in the outcomes under investigation, we ask whether or not the degree of difference is explainable by the policy, or if other factors uncovered in the analysis are alternative explanations. If they are not different, then either the policies have not been effective or some other factor has served to counter the impact of the policies. This too we explore. Whether or not conclusions are generalizable to the impact of policy on the entire country or region is then an item of discussion.

Methodological Approach: From Intent to Implementation

In order to allow for the use of earlier survey data, we picked areas that had been sampled two times previously, as sampling clusters of national surveys in the late seventies, and then resampled in 1982/83. The national surveys were the Household Budget Survey (HBS) in Tanzania and the Integrated Rural Surveys 3 and 4 (IRS3 & IRS4) in Kenya. Resampling was done in 1982/83 by a team including Paul Collier, Benno Ndulu, and P.O. Alila in a study of the coffee boom, eventually published as Bevan, Collier, & Gunning (1989).

In choosing which clusters to survey for our study, we wanted areas in the main coffee zone in Kilimanjaro and Murang'a. There was only one such cluster in Murang'a, Kariua/Gacharage, the others being too high in elevation, and thus mixing coffee production with tea (note there is no tea grown in Kilimanjaro), or too low, where coffee is only a marginal crop. In Kilimanjaro, there were two appropriate clusters; we chose Kirua Vunjo West over a cluster in Machame because the latter was quite close to Moshi. The proximity to a large population center would have distinguished this cluster from the Kenyan cluster.

As parts of national surveys, the sample sizes within the clusters were not large in the seventies. There were 20 households in the Kenyan cluster and 24 in the Tanzanian. These became our trace households. We were more successful than the 1982/83 survey in locating previously sampled dwellings. Indeed, we located all of the dwellings sampled in the late seventies. Some of the trace households had changed significantly since that time, as we expected. A few trace households in each country had to be dropped because of death or moving. Whenever possible, we replaced the earlier household with its logical successor. In one case in Kenya, the house was vacant as the family had bought land and moved elsewhere. We were able to ask the brother of that household's head for land market history, and used those data in our analysis in Chapter 10, but dropped the household for other purposes of the survey. In a similar case in Tanzania, the elderly respondent moved away to live with a son after the first round of our survey and was thus dropped for most purposes in our data. In another case in Kenya, the trace household had moved to town, leaving a hired worker managing the land. We treated the dwelling as our sampling unit, and thus picked up the hired worker as our survey household. In a third case, the elderly respondent to the earlier survey had died; a nephew inherited the land and lived in the house with his family. This household was included in all of the survey rounds.

We wanted a sample size of about 120 households out of a sampling frame of around 500 to achieve approximately a sample of one-quarter of the households. In Kenya, there were considerably fewer than 500 households in the original sample cluster for IRS 3 & 4. We therefore added a contiguous ridge served by the same coffee cooperative society to the sampling frame. This ridge was a logical extension of the sampling frame; indeed, one of the coffee factories

serving households in the original sampling frame was located on this ridge. In Tanzania the census ward, which was used as the sampling frame for the HBS, was quite large and diverse, extending from the Moshi/Dar road -- an elevation of 800 m -- up to the forest boundary -- an elevation of 1740 m. We picked one village for our sampling frame of new households, in a zone slightly more than halfway to the forest; this village had rainfall levels equivalent to those in the Kenyan cluster. Thus, our respondents in Tanzania were concentrated in this village, but 17 trace households were spread out above and below this village.

The sampling frame in Kenya consisted of the census listing form for the most recent census (1989). In Tanzania, we used the village chairman's listing of households. We then randomly selected approximately 100 additional households in each community from these frames in order to reach our goal of 120 sampled households.

We conducted 5 survey rounds at approximately two month intervals between December 1991 and August 1992; the first round collected information dating back to September, so the survey covered an entire year for the households. Over these five rounds, some households went out of existence because of marital separation or illness. For example, in one case a non-resident husband moved in with another woman at his place of work; his wife and children, in our sample, returned to her parents, leaving their house in the village vacant. In another case, in a single person household, the respondent became seriously ill and moved in with his parents, effectively making the household disappear. In the end, we had basically complete data -- enough to calculate income and expenditure -- for 111 households in the Kenyan sample and 115 in the Tanzanian sample. For any particular analysis, however, we sometimes end up with less than this number if the relevant data were not collected. For example, in the education analysis reported in Chapter 12, we were not able to administer tests of cognitive skills to all household heads, so the sample size is smaller. For land, we have data on some non-resident households in Kenya and from one household we had to drop from later rounds in Tanzania, thus making the sample size larger.

In conducting the survey, our goal was to do more than simply collect numerical survey responses. Inspired to some extent by Bardhan's 1989 edited volume, *Conversations Between*

Economists and Anthropologists, we aimed to understand the communities more fully than is possible from looking at survey forms. We wanted to talk further with our respondents about development in their communities over time so as to gain a deeper understanding of the constraints they face in working towards a better life for their families. When respondents gave confusing answers to questions, we wanted to be able to follow up, to probe until we understood the reported behavior. We could not expect the usual type of enumerator to conduct such probing. That was clear to us before we started. However, we thought we could train enumerators to know what to look for, and to notify us when something interesting came up. Our intended procedure was then to have enumerators conduct the formal surveys; at least two senior researchers would be in the field with the enumerators, however, and would revisit households for which the enumerators had flagged a particular item for discussion.

This procedure did not work. In the first round in Kenya we tried to get our enumerators to highlight questionable items of the survey forms; we planned then for the senior researchers to examine questionnaires in the evenings and return to those households where further exploration of issues seemed warranted. In the event, the senior researchers ended up spending most of their time dealing with problems of the enumerators. Despite having trained the enumerators and pre-tested all questionnaires (as we did throughout all five rounds), the retrospective questionnaires in particular were challenging for the enumerators to complete. Our time in the evenings ended up being spent finding errors in the questionnaires, and then having to readminister the same questionnaire to the same households ourselves the next day. This limited our time for probing.

Prior to the first Tanzanian round, we decided to change our *modus operandi.* In that round and all subsequent rounds, we spent a great deal of professional time visiting households. Ostensibly we were there to administer the survey ourselves, and we did indeed do so. However, our primary purpose was to engage the respondents in discussions about why they operated the way they did, to look out for unusual responses and to probe, and to get to know the respondents as people. This method, although costly in terms of professional time -- in the end, about 40% of the surveys were conducted by one of the three lead researchers, and another 20% by assistants who have MA's in economics -- was invaluable for the purposes of our study.

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The questionnaires are reproduced in Annex A1 of the USAID report on the project (Pinckney 1994). There were several recurring forms that were used every round, which gather information on labor in agriculture and food consumption, and other modules unique to each round. We aimed to be able to complete a typical questionnaire in under 1.5 hours, although the amount of time required varied considerably from household to household and from round to round. Further discussions and probing added to the overall time. Agricultural data on inputs, labor, harvest, and sales were requested each round so that an entire year was covered. The recall period was four months for the first round and two months for each subsequent round. Expenditure information was also collected each round; the recall period was one week for food, one month for other regularly-purchased items, and six months for large, occasional expenditures like education. The recall period for non-agricultural income was one month.

Several of the one-time forms required recall over a long period of time in order to allow us to study the dynamics of development. These include land purchases and sales, for which other researchers have used long-recall questionnaires. The other attempts to use long-recall questionnaires were more innovative: labor market history, asset ownership, dairy cattle ownership, rural wage rates, the history of coffee plantings, and child mortality. While farmers frequently responded that they were unable to remember the exact year of a transaction that took place around twenty years in the past, by probing we were able get dates approximately correct. The probing often took the form of reminding the respondent of a major historical event -- for example, independence, the Arusha declaration, or the murder of Tom Mboya -- and asking whether the transaction took place before or after that event.

Overall we are pleased with the results of the long-recall questionnaires. Results are usually consistent with national-level data over the time period. In the one case in which we knew the data from an earlier time period -- asking for the history of the daily wage rate -- the mean of the reported values for 1982 is within 10% of the actual value for that year as reported by the coffee boom survey. And our respondents in general had a harder time answering this question on wage rates than other recall questions pertaining only to their own households. We thus believe that these data are at least as good as current data collected from most surveys. And the

responses to these questions allow us to understand the dynamics of development much better than answers to questions only on respondent's current situation would have allowed.

Although our use of long-recall questionnaires was successful, our attempt to discern more of the dynamics of rural life by building on past surveys was a disappointment. We encountered numerous problems in trying to use older survey data. The Tanzanian and Kenyan government data, collected 13 to 14 years prior to our inquiries, proved difficult to use. No longer deemed relevant by the ministries in charge, the data were stored on tapes that had deteriorated and were difficult to read. Furthermore, data dictionaries and other necessary adjuncts for effective use of the tapes were nowhere to be found, even after we went through the lengthy process of gaining permission to access the tapes.

But problems with government storage were not the major impediment to use. Eventually, we were able to get the data sets from the 1970's through foreign academics, who had used them previously for research. These, together with the 1982/83 survey data, were provided, and our questions were graciously answered, by Paul Collier and associates at Oxford, and by Arne Bigsten and associates at Gothenburg. We anticipated some problems in following trace households, such as death and life-cycle changes in household membership. Of greater concern, however, was the difference in design of the various surveys. Neither of the Kenyan surveys included data on expenditures, our preferred proxy for income (as discussed in Chapter 4 below). The income data collected by the 1982/83 data, on the other hand, was likely to be even more subject to error than our own income data, given that the survey had only one round, necessitating that the respondents recall all harvest and input data for the previous twelve months. In the end, the combination of small numbers of trace households, the expected life-cycle difficulties, and the absence of a good proxy for such an important variable as income combined to hinder the usefulness of any detailed analysis of the earlier data. Thus, in the following chapters we make only occasional use of the earlier data sets. Perhaps the most useful aspect of the earlier data in the end is evidence that these communities are not unusual; comparisons on a variety of variables to other sampling clusters shows that these are rather unexceptional communities.

In September, 1994, at the close of the project, feeling that survey respondents too infrequently are allowed to see the results of their participation in rural surveys, two of those involved in the survey returned to Kirua/Gacharage to meet with respondents and to discuss the results of the survey. This experience was much appreciated by all sides; we only regret that distance and time prevented any of us from returning to Kirua.

Conclusions

Just as all politics is local, all development is, in the end, local. Policies only have an impact on the rural sector by having a series of impacts on individual rural households, collected into rural communities. Policies whose impact cannot be seen at the local level are ineffectual as instruments of improving the lives of the world's poor.

These statements justify the village study approach. Despite questions concerning unusual attributes of the selected villages, despite problems of generalizing results to the national level, the results reported in the forthcoming chapters show that this method of inquiry is forceful and useful. The ability to control a significant variable, like agro-ecology, much more than in national studies combine with the opportunity to observe the interplay of national policies and local institutions more than offset the problems of generalizing.

With regard to the methods used in our particular survey, ours was most innovative through the use of retrospective questionnaires to elicit information about long-run growth in rural areas. We are sanguine about the future use of such questionnaires, but stress that they require a more highly trained set of enumerators and considerably more time of professional researchers than the typical rural socio-economic survey.

Our experience makes us considerably less sanguine about the possibilities for our other attempt at innovation, building on past national surveys to gain perspective on an individual village. Even in a country such as Kenya with a large body of academic literature and a record of many years of government surveys, the government's storage of past data and data dictionaries has been abysmal. And our experience with surveys carried out by academics, while better in that the past researchers were very helpful and provided us with all that we asked for, points out the

difficulties of building on earlier surveys. With differences in design, particularly in the number of rounds of the survey, and differences in the primary rationale and approach, analysts are forced to make trade-offs between similarity to the past survey and collection of the most accurate data for present purposes. In our case, in the end we decided we did not believe the income data from the two earlier surveys, and neither had collected expenditure information. Without those basic data on income or a proxy, much of what we wanted to accomplish with those earlier data could not be done.

Nevertheless, we commend the village study approach to other researchers, and encourage the use of long-recall questionnaires.

References

Bardhan, Pranab. 1989. *Conversations Between Economists and Anthropologists: Methodological Issues in Measuring Economic Change in Rural India.* New York: Oxford University Press.

Pinckney, Thomas C. Ed. 1994. *Policy and Rural Development: Two Communities in East Africa.* A Report Submitted to USAID Africa Bureau on Project AFR-05430G-00-1123-00. Williamstown, MA, USA: Williams College Center for Development Economics.